

March 2008, Volume 14, No. 1

Mortgage Guaranty Insurance— Surviving the Subprime Crisis

By Steven L. Turner, ACAS, Candidate Liaison Committee

ately, you can't pick up a newspaper without seeing a headline about the subprime mortgage meltdown. Almost every publicly traded property and casualty (P&C) insurance company has had to address investor concerns about their exposure to subprime mortgage risk. Why would the stockholders of P&C insurance companies be concerned about the state of the housing market? This is because mortgage-backed securities are a popular investment choice

for P&C insurance companies. In addition, their shareholders want reassurance that investment portfolios will not suffer poor returns as a result of the subprime crisis.

While most P&C companies have limited, indirect exposure to mortgage loan defaults in their investment portfolios, mortgage guaranty insurers are taking the mortgage meltdown head-on. Mortgage guaranty insurance is one of many impor-

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Exam Start Time is 8:30 a.m. for CAS-Specific Exams

Beginning in 2008, the starting times for all exams have been standardized so that a single exam will begin at the same local time in all time zones. In addition, for CAS-specific Exams 3L and 5-9, the proctor instructions will begin at the published start time, 8:30 a.m., with the reading period and timed exam beginning after the proctor instructions have been completed. Candidates should arrive at the test center 45 minutes early for the check-in process.

Simplify One Aspect of the Exam Process and Register Online!

By Caitlin Jennings, CAS Communications Coordinator

tudying for a CAS exam is stressful enough, so who needs the added anxiety of worrying about whether your exam registration was lost or delayed in the mail? When you register for exams through the CAS Web Site, the form is securely transmitted immediately, so you don't have

to wonder if the fax went through or the postal service delivered it on time. You also receive an immediate confirmation of your submission of the registration form.

In addition to the comfort of a confirmation, future registrations will be a breeze as

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DATES TO REMEMBER

May 2008 Exam Registration Deadlines

There is only one deadline for each set of exams. Late registrations will not be accepted.

Exam 1/P March 20, 2008

Exams 2/FM, 3F/MFE, 3L 4/C, 5, 7, and 8 April 1, 2008

REFUND DEADLINE FOR MAY

Exams 3L, 5, 7, and 8 May 7, 2008

Exam 1/P and 2/FM
May 12, 2008,
and cancellation of appointment
by noon of the second business
day before test appointment

Exams 3F/MFE and 4/C May 8, 2008

CAS SEMINARS AND MEETINGS

RATEMAKING SEMINAR March 17-18, 2008 Royal Sonesta Hotel Boston Cambridge, Massachusetts

ERM SYMPOSIUM
April 14-16, 2008
Chicago Marriott Downtown
Magnificent Mile
Chicago, Illinois

SEMINAR ON REINSURANCE May 19-20, 2008 Royal Sonesta Hotel Boston Cambridge, Massachusetts

CAS SPRING MEETING
June 15-18, 2008
Le Château Frontenac
Ouébec City, Ouébec, Canada

Pass Marks on Joint Exams To Be Released

By Brett Rogers, SOA Registrar and Director of Exam Analysis

Editor's Note: The CAS began releasing pass marks for CASspecific exams in 2000. The CAS and SOA have agreed to start releasing the pass marks for joint exams. The original unabridged version of this article appeared in the Fall 2007 issue of The Future Actuary.

What Is The Pass Mark?

One of the most frequently asked questions about the multiple-choice actuarial examinations is, "What was the pass mark for the exam?" In other words, "How many

questions did I need to answer correctly on the exam to pass?" In the few weeks that follow the release of grades (on the familiar 0-10 scale), this question is asked repeatedly of the Education and Examination (E&E) staff by various interested parties such as exam candidates, employers, and others who are just plain curious. Until now, everyone has gotten the same answer: Pass marks for all SOA examinations (including those jointly sponsored with the CAS) are confidential. However, for the multiple-choice exams, all that is about to change.

Multiple-Choice Examination Pass Marks To Be Released

The CAS Board of Directors and SOA Board of Governors both passed resolutions in June 2007 requiring that pass marks be released for all multiple-choice examinations beginning with those to be given in November 2007. The grades for those exams will be released to candidates in January 2008. The multiple-choice exam pass marks will be published on the SOA and CAS Web Sites as percentages, rounded up if necessary to the nearest whole percent. Exam P/1 is administered via computer-based testing. As such, multiple forms of the exam are given and the number of correct answers needed to pass may differ from one candidate to another. For this exam, information about the range of passing scores will be provided.

A Word About the 0-10 Grades

The 0-10 grading scale, with scores of 6 and greater being passing grades, will continue to be used on all joint CAS/CIA/SOA exams. (For CAS Exams 3L and 5–9, no numeric score is given for those who pass an exam.) Raw scores are converted to 0-10 scores using increments of 10 percent of the pass mark. For example:

- A grade of 6 represents raw scores of at least 100 percent but less than 110 percent of the pass mark.
- A grade of 5 represents raw scores of at least 90

percent but less than 100 percent of the pass mark.

- A grade of 0 represents raw scores that are less than 50 percent of the pass mark.
- A grade of 10 represents raw scores of at least 140 percent of the pass mark.

When setting the pass marks for the actuarial exams (multiple-choice or written-answer), the examination committees have one goal in mind: separating candidates who have demonstrated adequate knowledge of the material—and therefore deserve to pass—from those who have not demonstrated such knowledge. Scores are only meant to give candidates a relative idea of how close or far away they were from passing or failing and are not factored in when pass mark discus-

sions are held. Consequently, on rare occasions there have been exams on which achieving a grade of 10 was not possible—even for a perfect paper. For example, let's say the pass mark was 22 for a 30-question exam. One would have to achieve a score of 30.8 (140 percent of 22) to score a 10. Therefore, a grade of 9 would be the highest possible score by candidates on this exam.

We hope that this change is welcomed by the candidates and will boost everybody's confidence in the integrity of actuarial education.



University Students: Apply for the 2008 CAS Trust Scholarship

By Caitlin S. Jennings, CAS Communications Coordinator

re you in need of some extra money to help you through school? The CAS is accepting applications for its scholarship program for college students pursuing a career in actuarial science. The CAS Trust Scholarship program, funded by donations to the CAS Trust, will award up to three \$1,500 scholarships to deserving students for the 2008-2009 academic year.

The applicant must be a permanent resident of the U.S. or Canada, or have a permanent resident visa, and admitted as a full-time student to a U.S. or Canadian educational institution to be eligible. The applicant also must have demonstrated high scholastic achievement and a strong interest in mathematics or a mathematics-related field.

Recommendations, transcripts, actuarial exam results, work experience, and written essays will all be considered in selecting the award recipients. Preference will be given to applicants who have passed at least one actuarial exam. Additional details and applications are available on the CAS Web Site. Applications are due by May 1, 2008. Winners will be notified in July.



The intent of the scholarships is to further students' interest in the property and casualty actuarial profession and to encourage pursuit of the CAS designations. The CAS Trust, established in 1979, affords CAS members and others an income tax deduction for funds contributed and used for scientific, literary, or educational purposes.

For questions about the program, contact Caitlin Jennings at cjennings@casact.org. f

Online Exam Registration

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your name and address are pre-populated on the registration form for exams, meetings, and any other CAS offerings after you log in. Your username and password also give you access to password protected areas of the CAS Web Site such as the Member Directory and the Change of Address form.

In order to register online, however, you must first submit an Electronic Signature Authorization Form (ESAF). By signing the ESAF, you agree to be bound by the rules and regulations related to the examinations. It will also provide a signature of record for comparison to signatures on the individual examination envelopes. Unless you have a name change, the ESAF only needs to be submitted once.

What are you waiting for? Submit your ESAF today by downloading it at http://www.casact.org/admissions/esaf.pdf. You may type directly into the form and print it out, or print it out to complete it. Don't forget to sign it!



The form can be mailed or faxed to the CAS office: Casualty Actuarial Society 4350 N. Fairfax Drive, Suite 250 Arlington, VA 22203 Fax: (703) 276-3108

Please allow three weeks for your submitted ESAF to be processed. When the processing has been completed you will be notified, and then you will be able to use the username and password that you indicated on the form to register the easy way—online!

Surviving the Subprime Crisis

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tant components of the complex mortgage lending system.

In order to finance their operations, lenders typically sell mortgage loans in the secondary market before they are ultimately packaged into mortgage-backed securities (for sale to the likes of a P&C insurance company). To protect against borrower defaults, secondary market investors require mortgage guaranty insurance coverage on loans that meet certain criteria. This coverage is generally required if the down payment is less than 20% of the home's value. The coverage offered by a typical mortgage guaranty insurance policy is 25% of the loan amount, but may vary according to size of the down payment and specific investor requirements. More coverage is not necessary because there is usually enough value in the property to recoup the remainder of the loss upon borrower default.

By assuming default risk on low-down payment loans, mort-gage guaranty insurance coverage provides more liquidity for such loans in the secondary market. This line of insurance has therefore enabled many borrowers to obtain a loan who otherwise would not have been able to afford a large down payment. Today, there are even mortgage insurance products that allow borrowers with good credit to avoid a down payment altogether.

A vast majority of loans underwritten by mortgage guaranty insurers are considered "A-paper" loans with higher credit scores. However, strong historical returns, competition, and advancements in risk management and pricing techniques have led these insurers to dip their toes into the subprime arena. A loan is typically considered subprime if the borrower's FICO credit score is less than 620. Because of the higher probability of default, these loans often carry very high interest rates. The interest rates are usually high enough to make these loans attractive in the secondary market without the added protection of mortgage guaranty insurance. Although in recent years, mortgage guaranty insurers have been able to write coverage for a portion of the subprime market by expanding their risk appetite and aggressively pricing the risk.

With the exception of a couple regional housing recessions in the early 1990s, America has experienced strong home price appreciation for the past 20 years. We have also seen a very low rate of borrower defaults as a result. When home prices are on the rise, a borrower that falls on hard times can either refinance a mortgage on more favorable terms or sell their home to get out of an unaffordable loan. When home prices fall, the hard luck borrower may have no other option than to default on the loan. As more borrowers default, banks foreclose and put the properties up for sale, increasing supply. Home prices are then subject to more downward pressure, leading to even more defaults.

It is very uncommon to see a steep drop in home prices on a national level. However, once the cycle starts, it takes time for the

markets to correct. Mortgage guaranty insurers pay a lot of claims in the meantime. In good times, it is not uncommon to see a mortgage guaranty insurer with a larger expense ratio than their loss ratio. In very bad times, loss ratios can climb well over 100%. It will take time, maybe more than a couple of years, to work out of the current downturn.

Some argue that exotic mortgages combined with loose lending standards in the Alt-A and subprime markets have added fuel to the over-heated lending market. The "Pay-Option" ARM loan, for example, has been around for decades, but for the past couple of years has been widely offered to borrowers with very low credit scores. Like a credit card, this loan allows the borrower to pay a minimum amount each month for a couple of years. The unpaid principle balance is allowed to increase up to a certain point and then the loan converts to a fully amortizing loan. After the conversion, the borrower may suddenly owe hundreds, if not thousands, more per month. Owing more than the house is worth and facing a sharp increase in payment, the only way out may be to default on the loan and file for bankruptcy.

The low-documentation or no-documentation loan is another lending fad that has helped push home prices up to unsustainable levels. Borrowers have been able to obtain loans without a down-payment while disclosing neither their income nor assets. Often, these loans were used for investment properties where the borrower was trying to make easy money by flipping houses. Home price declines can catch these borrowers in a difficult spot. They suddenly can't sell the investment property for enough to pay off the loan that they couldn't afford in the first place.

Even if a mortgage guaranty insurer avoided insuring these ultra-risky loans, they may not be out of the woods. Some fear that the high default rate in the subprime market will cause enough downward pressure in home prices to adversely impact the prime market where the mortgage guaranty insurers hold most of their risk. If that happens, it will certainly test the mortgage guaranty industry that is already feeling the heat from what little subprime exposure they have.

Fortunately, mortgage guaranty insurers tend to be well capitalized due to the catastrophic nature of the line. Regulators require these insurers to hold 50% of net earned premium for 10 years in a contingency reserve. This reserve may be released to pay claims when the incurred loss ratio exceeds 35% in any given calendar year. Given these requirements, the industry should be able to withstand a substantial downturn in home prices.

If there is a silver lining for the mortgage guaranty insurance industry, lenders and the secondary markets will truly understand and appreciate the value that a well-capitalized mortgage insurer brings to the table. Once the dust settles, we will hopefully see another 20 years of home price appreciation before mortgage guaranty insurance is tested again. §

The author thanks Bryon R. Jones, FCAS, for his review.

Pricing a Policy for Your Pooch: Pet Insurance

By Nicholas A. Merollo, Candidate Representative to the Candidate Liaison Committee

ave you ever thought about getting health coverage for your pet? More so, did you know that such insurance exists? I had the pleasure of exploring this topic with Laura Bennett, FSA, CFA, who is CEO of Embrace Pet Insurance. Laura, the only pet insurance actuary in the United States, recently spoke about her unique profession at the fall 2007 meeting of Casualty Actuaries of New England (CANE).

Having worked for Canada Life for most of her actuarial career, Laura decided that it was time for a change. The idea of running her own business was always appealing, so she enrolled at the University of Pennsylvania's Wharton

School of Business to obtain her MBA. While there, she became intrigued by friends who had just spent a substantial amount of money on their cat's medical bills. While the concept of pet insurance has been around in England for quite some time (approximately 20% of the English population insures their pets), it is a relatively novel idea in the United States. Required to compose a business plan for one of her classes, Laura developed her proposal to create a pet insurance company.

Laura began implementing her plan in July 2003. After years of planning, collecting and analyzing data, partnering with Lloyd's of London, and finalizing product design, Embrace sold its first policy in October 2006. Establishing an agency-type relationship with Lloyd's, Embrace is responsible for all

processes associated with designing, pricing, selling, and administering their products. Furthermore, they are responsible for paying claims on Lloyd's behalf.

Since pets are considered property and the policyholder is the pet owner, the law governing pet insurance is property and casualty, even though the nature of the product is life and health. So how does one go about pricing a policy for a kitten or puppy? Foremost, the process of gathering data was quite tedious. Pet data that other companies use is viewed as proprietary, so Laura and her team worked with several veterinary practices to obtain and analyze their databases. Several of the parameters analyzed include age of pet, species, breed, location, and whether the pet is spayed or neutered. Data credibility is hindered by the uninsured

nature of the pool. Laura comments that moral hazard also plays a part in complicating actuarial analysis, where "pet parents" (as the insurers call the pet owners) sometimes—both knowingly and unknowingly—give false information about their pets. Veterinarian opinion is often used and is considered the most credible source of data. For example, someone who rescued a cat from a shelter may not know the cat's exact age, but a veterinarian is able to approximate its age.

In obtaining a policy, pet parents can select various coverage options to meet their desired budget. Based on this, the insurer is better able to price the risk. Available policy

options include annual maximum, annual deductible, per visit co-pay, prescription and dental coverage, and continuing care coverage. Pet owners can actually go to Embrace's Web Site (www.embracepetinsurance.com) to price out their policies simply by filling out the rating variables for their pets and selecting their desired coverage level. They can also see what their monthly premium would be for the lowest possible coverage and the highest coverage available. Embrace's rating model is unique in the industry, since most other pet insurers just average price to determine the cost of a policy. Pet insurance does exclude pre-existing conditions, which encourages pet owners to insure their animals from a young age.

According to Laura, the historical industry growth for pet insurance has been approximately 20-25% annually, but is growing largely due to increased media coverage. In commenting about future pricing considerations, Laura explains that gender is captured, but not currently used, and that veterinary cost inflation of about 5-7% per year must be taken into account. Currently, 0.5% of Americans insure their pets and there are nine companies in the United States that sell pet insurance. While there has been very little actuarial opinion and analysis regarding the subject, pet insurance represents new opportunities for actuarial entrepreneurs.

For more information, please contact Laura Bennett at lb@embracepetinsurance.com or (440) 484-2261.



Preparing For Your First-Upper Level Exam

By Fiona So, Candidate Representative to the Candidate Liaison Committee

f the title of this article has caught your eye, congratulations on passing at least some of the preliminary exams and welcome to the world of upper-level exams. The completion of your preliminary exams is a significant milestone in your journey towards Fellowship. To be fully prepared for the differences in exam structure and exam rules that you will soon face, it is important to recognize and make the best out of the new challenges associated with writing the five upper-level exams.

Goodbye multiple-choice answers, hello short answers. Now that each question can be worth 0.25 (with increments of 0.25) to as many as 6 or more points, exam day is no longer a race to calculate all the questions you know first, followed by the more challenging questions. It will likely still feel like a race of sorts all the same. Should you start with the questions that are worth the most, the least, or the ones that you know the best? There are many different strategies and if you ask around, your colleagues will probably tell you different methods that may work for themselves but may not necessarily work for you.

In addition to the four-hour writing period, you will have an extra fifteen minutes for reading over the exam. Those of you who wrote SOA Exam M or Exams MFE and MLC will be experiencing the fifteen-minute reading period for the first time. How should you make the best use of these fifteen minutes? It is VERY IMPORTANT to check that your exam has all pages since it is your responsibility to ensure that you do not have a defective exam booklet. Aside from checking the exam booklet, other things to do include reviewing reference material, reading over most questions (you may not get to read every question), taking note in your head of questions that are worth a lot of points and allowing yourself some extra time to think about the more difficult questions. You can even fold pages or rearrange them in the order you choose. By the end of the fifteen minutes, you should have a general idea of the exam and a formulated game plan for writing the exam. A fellow candidate once suggested to me, "Invest in a speedreading course!" For some, the reading period sounds too stressful—if this is you, use the time for deep, thoughtclearing breaths.

Also, when composing your answer, always keep in mind the number of points the answer is worth and the

words used by the question writer. You don't want to tire your wrist by scribbling point after point on a question worth half a mark, while you really should be spending more time on the four-pointers. Also, "identify" indicates that a single item or list should suffice; "briefly explain" indicates that a sentence or two is requested; "explain" or "solve and show all work" means that you will need to write a few sentences or a short paragraph. On computational questions, it is critical to state any assumptions you make and lay out your steps. If you fail to do so, you may lose credit, even if you get the "correct" answer. (See the December 2007 issue of Future Fellows for an article on these instructive words.) As a consequence of spending too much time on questions worth fewer points, you may end up submitting non-legible chicken scratch on the questions worth many more points, or worse yet, blanks pages. Try not to completely abandon a question no matter how difficult it may seem. It would be unfortunate to lose points on a question of which you knew the answer only because the marker could not read your answer, you ran out of time, or you were simply too tired to write. Many candidates complain about achy wrists when writing upper-level exams. By knowing how much to write and writing only as much as a question requires, you can lessen your fatigue and prevent serious discomfort.

Since you are allowed to eat during the Exams 5-9, what foods should you bring? Stay away from caffeine unless you don't mind sacrificing valuable time for restroom breaks. Be mindful of your neighbors, who will not appreciate listening to you chew on foods or open food wrappers that crackle and pop. You want to choose foods that will refuel you for the four-hour marathon such as granola bars, nuts (already out of the shell!), and chocolate bars, which can be unwrapped and brought into the exam room in zip lock bags. Bananas are very quiet and a good source of carbohydrates needed for a quick energy boost.

Aside from preparing for the changes to the exam format and exam rules, remember that upper-level exams are only offered once a year, as opposed to twice a year for the preliminary exams or up to five times a year for computer-based tests. It is even more important now to be fully prepared to give it your best shot on your first try. In the end, that achy wrist will prove to be rewarding.

Developments on CAS Future Education Strategy

By Timothy K. Pollis, FCAS, Vice Chairperson, Candidate Liaison Committee

ast summer, the CAS Board discussed a potential plan for revisions to the Basic Education curriculum. (See Item XIII at http://www.casact.org/about/governance/bod/061707min.pdf). The proposal includes moving some CPCU material to an Internet course, consolidating Exams 5-9 into four exams, and adding a Capstone Seminar. The Capstone would be a 3-5 day limited attendance seminar, where candidates would gain deeper understanding and hands-on experience with specified topics, e.g., predictive modeling or ERM.

Following its discussion, the board asked the Syllabus Committee to come up with recommendations on how the topics could be arranged in such a system, noting that the Syllabus Committee was not bound to accept any or all parts of the board's suggested redesign plans. The options include increased use of Internet-based courses for some material, rearrangement of topics (for example, moving some material from Exam 9 to Exam 5), using a Capstone, and increasing coverage of Capstone topics within the current framework. Once the Syllabus Committee finalizes its recommendations in early March, it will forward them to the board for consideration.



The "Admissions/Exams" section of the CAS Web Site includes:

- CAS Syllabus of Basic Education and updates
- "Notice of Examinations"
- "Verify Candidate Exam Status" to verify that joint exams and VEE credits are properly recorded
- CAS Regional Affiliates have their own section on the CAS Web Site
- Feedback button to the Candidate Liaison Committee

If you have not received a confirmation of your registration for Exams 3L and 5-9 two weeks prior to the registration deadline, please contact the CAS Office.

REMEMBER YOUR CANDIDATE NUMBER!

Candidate Liaison Committee Mission

The Candidate Liaison Committee communicates with CAS candidates, collectively and individually, who are taking CAS examinations. The committee informs candidates as to appropriate courses of action available to them. Through periodic communication, this committee informs candidates of results of examination administrations, actions taken on complaints received regarding examination questions, and reasons for syllabus and examination changes being implemented. Communication encompasses existing policies and procedures as well as changes being considered. The committee should advise the CAS and its committees of the interests of the candidates regarding matters that come before the CAS and its committees. Candidates may contact the Candidate Liaison Committee at the CAS Office address. The Casualty Actuarial Society is not responsible for statements or opinions expressed in the articles, discussions, or letters printed in Future Fellows.



Future Fellows is published four times per year by the Casualty Actuarial Society, 4350 North Fairfax Drive, Suite 250, Arlington, Virginia 22203.

Telephone: (703) 276-3100; Fax: (703) 276-3108;

E-mail: office@casact.org; Web Site: www.casact.org.

Presorted Standard postage is paid at Lanham, Maryland.

Candidate Liaison Committee:
Erica W. Szeto, FCAS, Chairperson
Timothy K. Pollis, FCAS, Vice Chairperson
Jeffrey M. Casaday, FCAS
Gareth L. Kennedy, ACAS
Steven L. Turner, ACAS
Kendall P. Williams, FCAS
Juemin Zhang, FCAS

Candidate Representatives: Shira L. Jacobson Bradley J. Lipic Nicholas A. Merollo Mellody A. Mondini Yvonne Naa Korkor Palm Fiona So Examination Committee Liaison to the Candidate Liaison Committee:
Virginia R. Prevosto, FCAS
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CAS Admissions Coordinator: **Sharise Harrison**CAS Manager of Publications:

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Results of Fall 2007 CAS Examinations

Summary of Fall 2007 Examinations

Exam	Number of Candidates	Number of Passing Candidates	Number Below 50 of Pass Mark (Ineffective)	Effective Pass Ratio
1/P	3,142	1,181	372	42.6%
2/FM	3,792	1,666	372	48.7%
3	369	227	42	69.4%
4/C	1,857	926	71	51.8%
6	934	347	78	40.5%
9	607	317	40	55.9%

Summary of Fall 2007 Exam Survey

Exam	Percent Responding	Syllabus Coverage Inadequate (1) to Adequate (5)	Exam Clarity Not Clear (1) to Very Clear (5)	Exam Length Too Short (1) to Too Long (5)	Exam Difficulty Easy (1) to Difficult (5)	Exam Quality Poor (1) to Excellent (5)
2/FM	3.06%	3.81	3.47	3.19	3.63	3.44
3	38.21%	3.57	3.51	3.35	3.62	3.35
4/C	5.87%	3.85	3.22	3.67	4.07	3.41
6	28.59%	3.41	3.48	4.43	3.60	3.18
9	25.86%	3.94	3.51	4.06	3.69	3.47



