Princeton University   Department of Operations Research and Financial Engineering

Ronnie Sircar, *Professor*

August 28, 2010

Vice-Chancellor,
University of Oxford

Dear Vice-Chancellor,

<u>External Examiner Report: M.Sc. in Mathematical & Computational Finance</u>

It is a pleasure to send you my final report as the external examiner for the M.Sc. in Mathematical & Computational Finance (JMCF). It has been an honour to assist my undergraduate and Masters *alma mater*, and to follow the development of this highly successful program through its first three years.

As the external examiner, I was asked to comment on two sets of written examinations, the M.Sc. dissertations that were submitted in June, and to attend the examiners' meeting on July 13.

Academic Standards
The standard of the coursework and dissertations remains extremely high. The written examinations were challenging, and covered a large area of very advanced Financial Mathematics. There was some discussion in the examiners' meeting that the exams were tougher than in the previous two years, and I think they were in certain parts. Nonetheless, the overall marks show the students are on top of the material and it is still within their grasp.

As in previous years, the dissertation topics covered many areas of the field, with some notably interesting work in new areas like energy and emissions markets. Most displayed excellent technical understanding, a command of practical issues, and computational and/or statistical skills to implement.

The standards set for a pass, and for a pass with distinction were carefully discussed at the examiners' meeting, and were entirely appropriate, in my opinion. Two years ago year, the examiners awarded 9/29 distinctions (31%); last year: 6/18 (33%); and this year 9/30 (30%), so the level of distinction is pleasingly consistent.

Assessment Processes
Each examination paper is checked by the course organizer and the external examiner. Each dissertation is read and assessed by two readers who are not the supervisor. The overall mark is determined by consultation between the readers. This year, for the first time, all the dissertations were read by one member of the examination committee, which made final adjustment discussions in the examiners' meeting better informed. The assessment process is therefore rigorous. However, there are occasional large discrepancies between the assessments of the two readers. The examiners plan to obtain the supervisor's comment to be available to both readers after they have submitted their own assessments, but for use during the reconciliation process. This seems an excellent improvement.

Great care is taken over equity of treatment for students as I observed in the examiners' meeting. Comparing different styles of dissertations is difficult, and the examiners took great pains in their undertaking of this. I

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was happy to weigh in on three cases that I was asked to look at in detail.
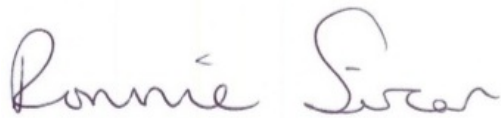
There was also discussion in the examiners' meeting whether some special topics choices were easier than others. We concluded there was no evidence to support this.

Comparative Standards
As I have reported before, the standard of this M.Sc. is very high compared with many comparable offerings I am familiar with in the US and the UK. This is reflected in the depth and breadth of the exams and dissertations. The course organizers are to be commended in creating a successful world-class program, which has been enhanced even further by some excellent recruiting to the faculty.

In closing, I am confident the M.Sc. will remain an attractive and successful program, with high standards producing alumni who will be a great credit to Oxford.

Sincerely,

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