

Advising Process for PhD-MSc students

The university has implemented changes with regard to the advising and course registration process for MSc students. As a first step, please review your academic record in Graduate Degree Works to check if the area of concentration is already indicated there (Graduate Degree Works can be accessed through the myIIT portal). If it is not, this is a reminder that all PhD-MSc students must select an area of concentration using eforms in Graduate Degree Works.

Transfer Credits/Course substitution Requests:

As part of advising consultations, students often ask about PhD-MSc program policy regarding transferring credits (from a previously earned graduate degree) or course substitution requests. The PhD-MSc program as currently structured reflects a tight sequence of courses, where courses taken in a given semester are required pre-requisites for courses that students enroll in the following semester. The program therefore requires you to enroll in all courses because the PhD qualifying and PhD comprehensive exams offered during summer focus on the content of those program specific courses. For these reasons, transfers or waivers are not possible for required courses.

The course registration process for PhD-MSc students follows.

Course Registration Process for PhD-MSc students:

The PhD program in Management Science (PhD-MSc) offers two areas of concentration: **Quantitative Finance** and **Analytics**.

All full-time PhD-MSc students are required to take the courses and exams listed below depending on their area of concentration and their year in the program.

Quantitative Finance Concentration in PhD-MSc - First year courses

MSC 511 Mathematics for Management Science I 3 credits	(Fall)
MSC 512 Statistics for Management Science I 3 credits	(Fall)
MSC 631 Theory of Finance I 3 credits	(Fall)
MSC 514 Mathematics for Management Science II 3 credits	(Spring)
MSC 515 Statistics for Management Science II 3 credits	(Spring)
MSC 633 Theory of Finance II 3 credits	(Spring)

Full-time PhD-MSc Quantitative Finance students who finished the first year courses listed above are required to take the PhD Qualifying exam in the summer following their first year of study (this exam is usually administered in May). PhD-MSc students are allowed a maximum of two opportunities to take the PhD Qualifying exam (they should pass this exam within those two attempts)

Quantitative Finance Concentration in PhD-MSc – Second year courses

MSC 611 Philosophy of Management 3 credits	(Fall)
MSC 621 Corporate Finance 3 credits	(Fall)
MSC 614 Quantitative Investment Strategies 3 credits	(Fall -cross listed with MSF 546)
MSC 612 Advanced Research Methods 3 credits	(Spring)
MSC 623 Investments 3 credits	(Spring)
MSC 613 Structured Fixed Income Portfolio 3 credits	(Spring -cross listed with MSF 545)

Full-time PhD-MSc Quantitative Finance students who successfully passed the PhD Qualifying exam and who finished all the second year courses listed above are required to take the PhD Comprehensive exam in the summer following their second year of study (this exam is usually administered in August). PhD-MSc students will have a maximum of two opportunities to take the PhD Comprehensive exam (they should pass this exam within those two attempts). Both PhD Qualifying Exams and the PhD Comprehensive Exams are offered during the summer of each year. The schedules for these exams are announced in April of each year.

Communicating Results of the PhD exams to Graduate Academic Affairs (GAA)

Results of the written PhD Qualifying Exam will be communicated to GAA as soon as the results are known and they will be recorded in Banner (Graduate Degree Works) by GAA. Results of the written PhD Comprehensive Exam will not be communicated to GAA as soon as the results are known. GAA has indicated that they consider the PhD comprehensive process as completed only when a PhD candidate (defined as a student who has passed both the written PhD Qualifying and written PhD Comprehensive exams) has successfully completed the PhD proposal defense event. Students should contact the Program Director for the PhD program if their PhD comprehensive exam result does not appear in their Graduate Degree Works record after they have successfully completed their PhD proposal defense event.

Course Registration beyond Second Year for PhD-MSc Quantitative Finance

Students who have successfully passed the PhD qualifying exam and PhD Comprehensive exam should register for MSC 691 Research Credits under the supervision of a Stuart School faculty member who has agreed to chair their dissertation committee. The student works closely with the chair of this committee to decide on the PhD dissertation topic and to establish the scope of this dissertation. The PhD-MSc program requires students to complete 24 MSC 691 credits hours prior to graduation.

Required steps for PhD Proposal Defense Event

A PhD candidate should complete the PhD Proposal Defense Event within six months of successfully passing the PhD comprehensive exam.

The PhD candidate will first establish a PhD dissertation committee within three months of passing the PhD comprehensive exam. This committee typically includes three faculty members at the Stuart School (a chair of the committee and two additional Stuart faculty) and an external faculty member from within IIT but outside of the Stuart School. The Student should consult with the chair of this committee to select a potential topic for the PhD dissertation and work with other committee members to prepare a PhD proposal document that essentially represents the first three chapters of the potential PhD dissertation. After this document is reviewed/approved by the student's PhD dissertation committee the student will forward this document to the PhD-MSc Program Director.

The PhD dissertation document then undergoes anti-plagiarism checks, a process that will require at least two weeks. After successfully completing these checks, the student will reserve a conference room for the date/time/campus and room location when all members of the PhD dissertation committee can attend the PhD Proposal Defense event. The student will submit a template document for announcing this event (see sample document in Appendix A), along with a signed/scanned form G301A (available for download at the Graduate Academic Affairs website) that contains the names of Stuart School faculty members (and external member) who serve on the student's PhD dissertation committee. At this point, the PhD-MSc Program Director will approve and forward the G301A form submitted by the student to GAA, and announce the PhD Proposal Defense Event to the Stuart research community a few days before this event.

Please note that all members of the PhD Dissertation Committee (including Stuart faculty on this committee and External members) should attend the PhD Proposal Defense event in person.

Required steps for PhD Dissertation Defense Event

A PhD candidate should successfully complete the PhD Dissertation Defense Event at least a year after successfully completing the PhD Proposal Defense Event. If a PhD candidate wishes not to wait for one year but prefers to schedule the PhD Dissertation Defense six months after their PhD proposal defense date, the student should submit a petition to request this using the 701 form. GAA has indicated that this gap period cannot be less than six months.

Students will consult with their PhD dissertation committee prepare a draft PhD dissertation document (that essentially represents the first three chapters of their final PhD dissertation) to be reviewed by their PhD dissertation committee. Once approved, the student will forward this document to the PhD-MSc Program Director.

The draft PhD dissertation document then undergoes anti-plagiarism checks, a process that will require at least two weeks. We do not want content submitted by students to show up as plagiarism based on the student's previous publications/submissions, or based on the work

of another published author. In other words, the content covered in the anti-plagiarism checks include self-authored work and co-authored work, in addition to work of other authors. The rationale for these checks is that the University requires each student to declare (while submitting your PhD dissertation for graduation) that the contents of the entire PhD dissertation represent the student's own work. Clearly, if a student has previously published content that is also included in his/her submission for anti-plagiarism checks that content will attract attention and scrutiny. Please know that after you graduate with a PhD degree, you can always publish your PhD dissertation at any time. Of course, you are encouraged to co-author papers based on your dissertation project with members of your PhD committee after you graduate.

After the anti-plagiarism checks are successfully completed, the student will reserve a conference room for the date/time/campus and room location wherein all members of the PhD dissertation committee are available to attend the PhD Dissertation Defense event, and convey this information to the PhD-MSc program director along with a template document for announcing this event (see sample document in Appendix B). The student will also submit to the PhD Program Director a signed/scanned form G301B (available for download at the Graduate Academic Affairs website) that contains the names of Stuart School faculty members (and external member) who serve on the student's PhD dissertation committee.

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PhD Graduation Checklist (for PhD Quantitative Finance students)

1. Review your record on Graduate Degree Works with the Program Director (MSc) at least 18 months prior to the date you expect to graduate to assure that you have satisfied all academic degree specific requirements for graduation.
2. Meet with the University thesis examiner (Dr. Jonathan Harmon) at least three months in advance of your expected PhD dissertation defense date to assure that the PhD dissertation satisfies all University requirements and that you complete the G501 form.
3. File for graduation and register for graduation/hooding ceremony well before the announced deadlines.

Analytics Concentration in PhD-MSc - First Year courses

MSc 511 Mathematics for Management Science I 3 credits	(Fall)
MSc 512 Statistics for Management Science I 3 credits	(Fall)
MSc 615 Predictive Analytics 3 credits	(Fall - cross listed with MAX 522)
MSc 514 Mathematics for Management Science II 3 credits	(Spring)
MSc 515 Statistics for Management Science II 3 credits	(Spring)

MSC 616 Social Media Marketing Analytics 3 credits

(Spring -cross listed
with MAX 523)

Full-time PhD-MSc Analytics students who finished the first year courses listed above are required to take the PhD Qualifying exam in the summer following their first year of study (this exam is usually administered in May). PhD-MSc students are allowed a maximum of two opportunities to take the PhD Qualifying exam (they should pass this exam within those two attempts)

Analytics Concentration in PhD-MSc – Second Year courses

MSC 611 Philosophy of Management 3 credits (Fall)
MSC 651 Quantitative Marketing Models 3 credits (Fall)
MSC 652 Supply Chain Analytics 3 credits (Fall)

MSC 612 Advanced Research Methods 3 credits (Spring)
MSC 653 Current Topics - Marketing Analytics 3 credits (Spring)
MSC 655 Advanced Analytics for Decision Making 3 credits (Spring)

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APPENDIX A

See the PhD Proposal Defense Announcement template document below:

Student Presenter: Joseph D. Cursio

Proposal Title: CR-CS Hypothesis for industrial & financial firms, & Director Tenure, Tobin's Q and Endogeneity

Proposal Defense Time/Date: 9:30 - 10:30 AM, April 6th, 2022 (CST)

Join Zoom Meeting

<https://us05web.zoom.us/j/82535851343?pwd=ei8xdSt1cTV1YVByQ3dzRFh5a1NOQT09>

Meeting ID: 825 3585 1343

Passcode: 511891

One tap mobile

+13126266799,,82535851343#,,,,*511891# US (Chicago)

+19294362866,,82535851343#,,,,*511891# US (New York)

Dial by your location

+1 312 626 6799 US (Chicago)

+1 929 436 2866 US (New York)

+1 301 715 8592 US (Washington DC)

+1 346 248 7799 US (Houston)

+1 669 900 6833 US (San Jose)

+1 253 215 8782 US (Tacoma)

Meeting ID: 825 3585 1343

Passcode: 511891

Find your local number: <https://us05web.zoom.us/u/lb7yfjYCUe>

Committee: Professor Wang (Chair), Professor Fang (member), Professor Cai (member), Professor Argamon (non-Stuart member)

Proposal abstract: The Credit Rating – Capital Structure Hypothesis (Kisgen 2006 JoF) is half-correct: Firms will adjust their capital structure to avoid a potential credit rating downgrade, but not to achieve a potential credit rating upgrade. Speculative grade firms will issue adjust their capital structure than investment grade firms, financials and utilities adjust less than industrial firms, firms near the investment grade/speculative grade boundary will adjust more, and the level of moderation is moderated by credit spreads. How firms adjust according to credit ratings affect the Shyam-Sunders and Myers (1999) tradeoff and pecking order capital structure theory tests.

Endogeneity is endemic in corporate financial research and reliable inference nearly impossible. A dynamic panel GMM estimator can address both unobserved heterogeneity and simultaneity.

APPENDIX B

See the PhD Dissertation Defense Announcement template document below:

Student Presenter: Yue Chen

Thesis Title: CONTRACT ROLLOVER AND VOLATILITY

Final Defense Time/Date: Aug. 11th 2022 (Thursday), 12:30am to 13:30pm CST

Zoom Link:

<https://iit-edu.zoom.us/j/82066844908?pwd=VW4wMXJ0aFo1ZmYxNXZCUTBYR1hKdz09>

PhD Committee:

Professor Ricky Cooper, Ph.D. (Chair)

Professor Ben Van Vliet, Ph.D. (Member)

Professor Sang Baum Kang Ph.D. (Member)

Professor Igor Cialenco Ph.D. (External Member)

Thesis Abstract:

In futures markets, approaching the expiration days, most market participants close out existing positions of front month contract and open new positions of next month contract. Contract rollover is a unique characteristic of derivatives markets and plays a role on the volatility behavior dynamics. The object of this dissertation is to evaluate the impact of contract rollover activities on unconditional volatility and conditional volatility modeling. First, two contract rollover measures, volume ratio and open interest ratio of front contract over next contract are created. Second, this study investigates the impact of contract rollover measures on both unconditional volatility estimation models and conditional volatility estimation models. Third, it examines the roles of contract rollover activities in unconditional volatility prediction models. Last, to further explore the relationship between contract rollover measures and unconditional volatilities, the vector autoregressive model is conducted to test granger causality. The findings show that the volume ratio and open interest ratio have significant impact on unconditional volatilities and conditional volatility in soybean, wheat, gold, copper, crude oil, and natural gas futures markets, except on conditional volatility in silver futures market. Alternative models that incorporate contract rollover measures outperform benchmark models that do not incorporate contract rollover measures in both estimation models and prediction models. Moreover, the findings provide the strong evidence that there is significant bidirectional granger causality among volume ratio, open interest ratio and unconditional volatilities in all investigated futures markets. The empirical results confirm the important role of contract rollover on volatility behavior and are beneficial to futures exchanges to set and monitor margins precisely for their customer's trading accounts in commodity futures markets.