





**PhD-MSA program goals/objectives****ge effective Fall 2023 semester**

Effective Fall 2023 semester, the PhD program at the Stuart School will reflect a name change (from the previous title (PhD in Management Science or PhD-MS) to PhD in Management Science and Analytics (PhD-MSA). The main impetus for this change many PhD-MSA courses already focus heavily on Analytics content that emphasize analytics-oriented learning insights. Furthermore, adding the word "Analytics" in the program title serves to acknowledge recent developments in analytics that have boosted career opportunities for our PhD graduates.

First, students who are currently pursuing the MS in Management Science and Analytics (MS-MSA) program at the Stuart School may apply for admission after successfully passing the PhD qualifying exam for the PhD-MSA program that is administered in the summer of each year. Such students are encouraged to take this qualifying exam in the summer following their first year of study; they may take the qualifying exam again in the summer following their second year of study as long as they have not filed for graduation with a MS in Management Science and Analytics degree; if they fail the second attempt also, they cannot apply for admission to the PhD in Management Science and Analytics program, but will continue to remain enrolled in the MS program in Management Science and Analytics. In other words, Stuart School will not entertain a petition requesting a third attempt to take the PhD qualifying exam. If admitted to the PhD-MSA program, credits for completed courses in the MS-MSA program will seamlessly

### **Flexibility for students to Change from MS-MSA to PhD-MSA program and vice versa**

For a variety of reasons, the career goals of PhD students may change while they pursue the PhD-MSA program. For example, a student may decide to graduate sooner with a master's degree in management science and analytics to pursue other career opportunities, instead of completing the PhD degree. To accommodate this, a PhD-MSA student may petition the school to terminate that program, and transfer all their PhD academic credits to graduate with a MS in Management Science and Analytics (MS-MSA) degree.

### **Advising Process and Course Registration Procedures**

The PhD-MSA program director (Dr. Siva K Balasubramanian, [sivakbalas@stuart.iit.edu](mailto:sivakbalas@stuart.iit.edu)) serves as the academic advisor for PhD students. Please review this document and other PhD-MSA program resources mentioned above



MSC 514 Mathematics for Management Science II 3 credits  
MSC 515 Statistics for Management Science II 3 credits  
MSC 616 Social Media Marketing Analytics 3 credits

(Spring)  
(Spring)  
(Spring -cross listed)

**Mandatory participation in Friday Research Presentations at the Stuart School**

All PhD-MSA students are required to attend the weekly Friday Research Presentation events during each semester that scheduled



student preparation. They often include more detailed and thoughtful questions than is typical of say, the final exam of each PhD course that a student has previously taken.

Full-time PhD-MSA students who finished the first year courses listed above are required to take the PhD Qualifying exam in the summer in May. PhD-MSA students have a maximum of two opportunities to take the PhD Qualifying exam (they should pass this exam within those two attempts).

Full-time PhD-MSA 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-MSA students will have a maximum of two opportunities to take the PhD Comprehensive exam (they should pass this exam within those two attempts).

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

Results of the written PhD Qualifying Exam are forwarded to GAA and they will be recorded in Banner (Graduate Degree Works) by GAA.

However, results of the written PhD Comprehensive Exam will not be communicated to GAA as soon as the results are known. This is because GAA considers the PhD comprehensive process as successfully completed only after a PhD candidate (defined as a student who has passed both the written PhD Qualifying and written PhD Comprehensive exams) has successfully completed their 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.

### **Internship/externship Opportunities**

After successfully completing the written PhD Comprehensive Exams at the end of their second year of study, PhD students may accept paid internship/externship opportunities at leading Chicago firms.

Specifically, such opportunities take advantage of the PhD student's coursework/concentration area in the PhD program and consider ways to leverage that for the benefit of both the student and the firm offering the internship/externship. Stuart School's Career Management Center coordinates all internships/externships. In some instances, such opportunities may arise from professional contacts of Stuart faculty members. All internships/externships are oriented toward the student's professional development and generate access to proprietary data that the firm offering those opportunities is willing to let the student use in order to pursue their PhD dissertation.

For all these reasons, PhD students who qualify for internship/externship opportunities (i.e., maintain good academic standing as documented in a satisfactory cumulative GPA above 3.0, passing the PhD qualifying and PhD comprehensive exams within two attempts in a timely manner) are generally encouraged to pursue these opportunities. However, all PhD students should note that internship/externship opportunities (via CPT documentation) are restricted to those that have completed 36 hours of PhD coursework and meet other internship/externship qualification requirements discussed above. PhD students are required to discuss and seek approval of such internships/externships from the PhD-MSA Program Director, prior to accepting any internship or externship. Additionally, international PhD students who wish to apply for such internships/externships should work with Stuart School's Career Management Center regarding mandatory paperwork to satisfy CPT (Curricular Practical Training) documentation requirements before accepting offers of employment from a firm about internship/externship opportunities.

### **PhD Dissertation topic/PhD Dissertation Committee**

As described earlier, PhD-MSA students who success nBT/F3 9.96 Tf1 0 0 1 72.024 595.66 Tm0aTeW\* nBT/F2 9.o3p912

This committee should include at least two other research-active faculty members (defined as PhD qualified

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 completed, the student should reserve a conference room with Lyzzette Rodriguez ([ltorosrodriguez@stuart.iit.edu](mailto:ltorosrodriguez@stuart.iit.edu)) for the date/time/campus and room location that all members of the PhD dissertation committee are available to attend the PhD Dissertation Defense event. The student will convey this reservation to the PhD-MSA program director along with a template document for announcing this event (see

## 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 6<sup>th</sup>, 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/lb7yfyYCUe>

**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-Sunder 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 confirT1 nBT/3-L5075uu-15(4)-10(utut)5(c)-5(5-3(t)-70(r)69(2q0.00000912 0 612 792 reW\* nBT/F3 9