

Kellogg School of Management

Doctoral Program in Finance

5 June 2020

The Finance doctoral program provides students with a rigorous background in finance, both theoretical and empirical, economics, mathematics and statistics. These tools, plus opportunities for supervised independent research, enable students to make their own contributions to the understanding of financial markets and institutions. Doctoral students are trained to be future faculty members at leading research universities.

Current theoretical and empirical research in the Department of Finance broadly spans the areas of asset pricing and corporate finance. Active current research topics include macro-finance, financial crises, international finance, market microstructure, regulation, and financial econometrics. Moreover, PhD candidates have the opportunity to interact with the broader research community at the Kellogg School, the adjacent Economics Department of Northwestern University, and other departments at Northwestern University.

Requirements and Main Events

The Finance Department's doctoral program is designed to prepare researchers and teachers who can perform at the top of their profession. Since Finance is a discipline of Economics, all PhD students are expected to develop solid foundations in Microeconomics, Macroeconomics, and Econometrics, prior to starting work in Finance. The PhD program's overall main emphasis is on research and original thought. Students are expected to write a research paper in their second and third years, and to make regular research presentations to the department.

While students can enter the program from a variety of disciplines, they must show an appreciation for and willingness to learn economic principles, and they must have developed a certain level of mathematical maturity that includes real analysis, linear algebra, and probability theory at an advanced undergraduate level.

The Finance department's requirements for a PhD degree that apply in addition to The Graduate School (TGS) at Northwestern, and those requirements are outlined below. Additional information on the Finance department is available at:

http://www.kellogg.northwestern.edu/departments/finance/programs/phd_program.aspx

Residency Requirements

Doctoral students are expected to be on campus full time and involved in the research and teaching activities of the department throughout the year, including summer quarter, to qualify for continued funding. **Students who will be away from campus for more than two (2) weeks during an academic quarter need the approval of their director of graduate study (DGS) and dissertation advisor, if students have a dissertation advisor at this point in their studies.** Unexcused absences may disqualify students from receiving financial aid from the Kellogg School of Management and/or Northwestern University.

Additionally, doctoral students who are conducting research off campus or who are hired as interns for professional development purposes are required to report these activities to the Kellogg School of Management. Before a student engages in research off campus or accepts an internship, approval must be granted by the student's DGS and dissertation advisor. Also, a description of the research project or the terms of the internship must be provided, along with the timeframe the student will be away from campus. If an internship is paid, an adjustment to the student's financial aid package may be made in consultation with the Faculty Director of Kellogg's PhD Program.

The First Year

In their first year students take required courses, electives, and a comprehensive prelim exam. There is no first-year work requirement. The schedule below is the typical workload.

first year – typical suggested course load				
fall	Microeconomics I	Econometrics I	Macroeconomics I	Elective (optional)
winter	Microeconomics II	Econometrics II	Macroeconomics II	Elective (optional)
spring	Microeconomics III	Econometrics III	Macroeconomics III	Elective (optional)
Econ Prelim Exam (Currently in July)				
summer	data training/reading/RA work			

Required Courses: All first-year students must complete the three core sequences in Microeconomics, Macroeconomics, and Econometrics offered by the Economics department. All first year students are expected to take three courses every quarter. Students can also take a fourth elective course, but this course is not required.

Electives: Elective courses are selected in consultation with the director of graduate study (DGS), based on each student's background and objectives. The DGS must approve all first-year coursework.

Core Competence: First-year students are required to establish competence in Economics. This can be done by achieving a 3.0 GPA across the nine required courses in the sequence. If a student is on academic probation (i.e., fails to maintain the 3.0 GPA) the student will not qualify to continue in the PhD program and will be excluded (dismissed) from the PhD program

Students can appeal this exclusion decision directly to The Graduate School (TGS). The Finance department does not have a formal appeals process. Here's the link to TGS for your reference:

<http://www.tgs.northwestern.edu/about/policies/satisfactory-academic-progress.html>

Academic Advisor: Upon entry into the program all students are assigned an Academic Advisor. The advisor will be selected by the DGS, based on each student's background and stated interests. The role of the academic advisor is to provide guidance to the PhD student, especially in their first and second year. Students should meet with their academic advisors at least quarterly. The Academic Advisor does not need to be part of the student's Dissertation Committee later on.

Summer Quarter: Students are expected to spend the summer of their first year in residence in the department. This is a good time to begin exploring data sources available at Kellogg, begin a research project, or to begin reading Finance research papers under the direction of a Kellogg faculty. A student will work as a research assistant for 10 hours a week during the months of July and August.

Annual Academic Progress Report – First-Year Evaluation: At the end of the academic year, all students will receive a written academic progress report based on their meeting the academic requirements and expectations outlined for first-year Finance PhD students.

Managerial Economics and Strategy Master’s Option: For students who choose to not continue in the Finance PhD program after year one and are in good standing, the department offers a MS degree in Managerial Economics & Strategy. Students must complete a minimum of nine (9) graded courses, maintain an overall minimum 3.0 GPA. No master’s thesis is required.

Candidates for the MS degree are required to satisfy:

- 3 courses/credits of Microeconomics
- 3 courses/credits of Econometrics
- 3 doctoral courses/credits from an approved list of courses within Macroeconomics and Econometrics.

To qualify for the MS degree, the student must have the approval of the Department Chair and Director of Graduate Studies based on a review of the student’s overall performance in the PhD program. The Department Chair (MS chair) and Director of Graduate Studies (committee members) will also form the student’s MS committee. The student will receive the MS degree upon satisfactory completion of Finance Department and Graduate School requirements.

The Second Year

In their second year students take required courses, electives, a comprehensive Finance exam, and they complete a research paper, according to the schedule below. Students are also expected to participate in the weekly Finance research seminar, and to complete a work requirement.

second year				
fall	Corporate Finance I	Asset Pricing I	elective	elective
winter	Corporate Finance II	Asset Pricing II	elective	elective
spring	Corporate Finance III	Asset Pricing III	elective	elective
Finance Prelim Exam (early June)				
Presentation of Research Papers (early September)				

Required Courses: The required courses in the second year are six doctoral classes offered by the

Finance department: Asset Pricing I, II and III, and Corporate Finance I, II and III.

Electives: Students are required to take an additional course every quarter during their second year. Students are encouraged to select second year Elective courses from the Economics Department. Examples of such classes include Labor Economics, Advanced Macro, Econometrics, Information Economics and Industrial Organization. All elective courses need to be approved by the DGS.

Finance Comprehensive Exam: Students must pass a Finance Competence Requirement. This can be done by achieving a 3.6 GPA across the six finance doctoral courses, or by passing a comprehensive Finance exam. The Exam takes place at the beginning of the summer quarter, typically in June. Students who fail the comprehensive exam will be excluded from the program.

Research Paper and Advisors: Students need to complete a research project to be presented to the department in the first week of September following the summer quarter of the second year. The research project must be supervised by an individual faculty advisor (who can be the same as, or distinct from, the Academic Advisor) selected by the end of the winter quarter. The second-year advisor need not be the same person as the eventual main dissertation advisor.

Students need to inform the DGS of their choice for the second-year advisor by June 15 of their second year.

The second-year project serves as an introduction to research in finance and as an evaluation of the candidate's aptitude for performing original research that can eventually be transformed into a publishable paper. The **primary metric** for evaluating the second year project is whether it asks an interesting research question. Along these lines, the student should formulate the research question in clear economic terms, explain why it is important to provide an answer in connection to the existing research, and make some progress towards providing an answer. Examples of sufficient progress are: 1) identifying and assembling a new dataset, along with the documentation of some stylized facts; 2) a novel identification strategy that provides an estimate of an interesting causal effect; or 3) formulating a new model -- or extending an existing model -- together with some indication of progress towards characterizing the solution. Students are expected to answer faculty questions about the existing literature and their chosen line of research and future plans. The second-year project often forms the basis for a thesis topic, but it is not necessary that it does so.

The student should demonstrate mastery of the literature on a specialized topic and should be able to explain the broader significance of the chosen topic. Further, the student should formulate an interesting question that addresses a gap in the existing literature, and offer some initial proposal on how to go about answering this question. Sufficient progress could consist of initial steps of assembling a new dataset and/or the documentation of some stylized facts. In the case of theoretical research, the formulation of a new model or extension of an existing model together with some indication of progress toward solving the model would constitute sufficient progress.

Weekly Finance Seminars: External speakers, and occasionally internal ones, present research papers at the department's weekly seminar series and bag lunch series. PhD students are expected to attend those presentations.

Work Requirement: Students work as RAs and TAs for three years, spanning years two, three, and four. An academic year contains four quarters: fall, winter, spring, and summer. A portion of the stipend will

be allocated toward wages for approximately 10 hours of work per week (100 hours total for the quarter), including summers. Students are not required to TA more than 6 (six) quarters total during this three-year period. The director of graduate study (DGS) oversees all work assignments.

During the Summer, students work as Research Assistants to faculty. Students can choose the faculty they will work for, or the director of graduate study can help match them to faculty according to their research interests.

The DGS needs to approve all TA and RA assignments, including any teaching for executive or Economics Department classes beyond the 10 hour requirement. Students should request permission from the DGS for any compensated job outside or inside the University. From all sources of work, students are not allowed to work over 20 hours per week; this is a TGS requirement.

Annual Academic Progress Report – Second-Year Evaluation: The department meets at the end of the summer quarter and performs a comprehensive evaluation of every second-year PhD student, taking into account exam performance, the research paper, coursework grades, performance in the work requirement, and participation in weekly seminars. Following this evaluation, all students receive written feedback on their strengths and weaknesses. Students with satisfactory evaluations are deemed to have passed all of their qualifying exams and are admitted to candidacy. Students that do not successfully pass the second year evaluation can appeal this decision directly to The Graduate School (TGS). The Finance department does not have a formal appeals process. Here's the link to TGS for your reference:

<http://www.tgs.northwestern.edu/about/policies/satisfactory-academic-progress.html>

Finance Master's Degree Option: For students who do not qualify to continue in the PhD program at the end of year two, the department offers the option to earn an MS degree in Finance. The student will receive the MS degree upon satisfactory completion of Finance Department and TGS requirements. If the student receives and MS pass on the Finance comprehensive exam (considered the culminating project) but fails to be admitted to candidacy in the second year, the student can receive the MS degree, subject to satisfactory performance in classes. In the latter case, the student will receive financial support until the end of the summer quarter, at which point the student will graduate.

Third Year

Following admission to Ph.D. candidacy, students work on research toward a thesis, under the direction of one or more faculty advisors. The main goal of the third year is producing a research paper that is of publishable quality.

Coursework: Depending on their research objectives, students are encouraged -- but not required -- to take additional classes in their third year. All coursework must be approved by a faculty advisor and the director of graduate study.

Dissertation Committee: Students are expected to choose a dissertation chair in the Fall and report their choice to the DGS by November 15 in their third year. This choice is not final; students can change their dissertation supervisor later, but this is uncommon.

Department Presentations: During their third year in the program, students are required to present their work in progress to the department twice per year, once in the Fall and once in the Spring departmental seminar. The students need to schedule these presentations at the beginning of the year with the faculty member who is coordinating the departmental brownbag seminar.

Finance Seminar: Students are required to continue attending the weekly Finance seminars, and to participate in group discussions of the research papers presented.

Work requirement: The second-year work requirement remains the same for years three and four. RA or TA opportunities exist for qualifying students whose research takes them beyond their fifth year. Students are expected to be on campus full time in the quarters that they work as teaching/research assistants.

Third Year Paper Requirement: At the end of the third year, students are required to present a completed research paper to the department by the end of June of their third year. The research paper has to be sufficiently advanced that it is part of the student's dissertation -- though it need not be the first chapter.

In addition to fulfilling the requirements of the second-year paper, the third-year paper should demonstrate substantial progress toward an original piece of research. The paper could be an advance of the second-year paper or it can tackle a new topic. In either case, the paper should address an economically interesting question, and should provide a clearly identifiable contribution to the literature. The paper needs to introduce and motivate the main research question, outline data (for empirical work) or a model (for theoretical work), present new results, discuss how these results contribute to existing research, and outlines future work. The student should provide an outline of future work.

Students' performance towards this requirement may count towards their fourth year evaluation (see below).

Annual Academic Progress Report – Third-Year Evaluation: At the end of the academic year, all students will receive a written academic progress report based on their meeting the academic requirements and expectations outlined for third-year Finance PhD students.

Fourth Year

The main activity in the fourth year and beyond is research toward a thesis, under the direction of one or more faculty advisors. In the fourth year, students need to satisfy a Proposal Requirement.

Fourth Year Thesis Proposal (“Prospectus”): By the fourth year, the student is expected to have settled on a thesis topic. Students need to complete their dissertation proposal by the end of the fall quarter (December 10) in their fourth year (matriculants in fall 2017 or later). For earlier matriculants, the deadline is August 31st of their 4th year.

The purpose of the dissertation proposal defense is to present a well worked out dissertation plan to the committee. The committee must be able to evaluate with confidence whether the dissertation as proposed meets quality standards and can be successfully executed by the student. The dissertation proposal should articulate a plan through three papers, one of which should be at an advanced stage.

The main component of the proposal is an original research paper. The paper can be distinct from the second-year project or the third-year paper. In addition to the requirements for the second- and third-year papers above, the paper needs to be sufficiently well developed as to have a clear path towards eventual publication in a peer-reviewed journal. If the student enters the academic job market in the fifth year, this paper will be the student's job market paper.

The student's dissertation committee must approve the proposal. To grant approval the committee should believe that the candidate will be able to produce papers publishable in a top field journal. The meeting with the dissertation committee is open to the Northwestern academic community. Students may and should attend other students' proposal defenses. When evaluating the student, the committee will take into account the student's previous efforts during the third year.

Students who do not pass the proposal in the fall of their fourth year are on probation with TGS. They have *only one additional opportunity* to pass their proposal, by the end of the Spring quarter in year four. Students that do not pass their PhD proposal after the second opportunity graduate with an MS degree. Students who do not successfully pass the proposal can appeal this decision directly to TGS. The Finance department does not have a formal appeals process. Here's the link to TGS for your reference:

<http://www.tgs.northwestern.edu/about/policies/satisfactory-academic-progress.html>

Department Presentations: During their fourth year in the program, students are required to present their work in progress to the department twice per year, once in the Fall and once in the Spring departmental seminar. The students need to schedule these presentations at the beginning of the year with the faculty member who is coordinating the departmental brownbag seminar. The student's proposal in year four counts as one (or two if the student resubmits the proposal in the Spring quarter) of these presentations.

Finance Seminar: Students are expected to continue attending the weekly Finance seminars, and to participate in group discussions of the research papers presented.

Work requirement: The second-year work requirement remains the same for years three and four. RA or TA opportunities exist for qualifying students whose research takes them beyond their fifth year.

Fifth Year

Job Market and Thesis Defense: The dissertation, which consists of three separate chapters, should make a well-motivated and original contribution to the finance and economics literature. The Finance Department advises, but does not require, that at least one of the chapters is solo-authored. In the dissertation defense, the candidate should be able to explain the contribution relative to the literature in clear terms, defend the significance of the contribution, and offer a broader vision of a research agenda.

Typically, students enter the job market in their fifth year. On rare occasions, a thesis advisor may decide that the student is making good progress but a sixth year would be beneficial in producing the best quality outcome. On such occasions, and provided suitable funding arrangements can be made, a student can stay in the program for a sixth year. The PhD degree is awarded following a successful thesis defense in accordance with The Graduate School requirements.

Department Presentations:

Finance Seminar: During their fifth year in the program, students are required to present their work in progress to the department twice per year, once in the Fall and once in the Spring departmental seminar. Students are expected to continue attending the weekly Finance seminars, and to participate in group discussions of the research papers presented.

Annual Academic Progress Report – Fifth-Year Evaluation: At the end of the academic year, all students will receive a written academic progress report based on their meeting the academic requirements and expectations outlined for third-year Finance PhD students.

Sixth Year

If a student delays entering the job market to the sixth year, the department and Kellogg will provide a stipend of \$10,000 in the fall quarter of the sixth year.

Funding and Research Support

Stipend: Finance doctoral students are typically funded for 5 years through a combination of sources: stipends, teaching and research appointments, and in some cases teaching appointments. Tuition and health insurance coverage are also provided to the student. Funding is renewable each year and is contingent upon satisfactory academic performance. Additional funding opportunities are available for students in good standing in their 6th year. Funding is provided from TGS (scholarships), the Deans Office, the Finance Department, and through teaching/research assignments.

Research and academic support: The Finance Department strives to provide PhD students with the resources necessary for a successful academic career. Each PhD student is provided funds for purchase of a personal computer. Students also have access to multiple university computing clusters that have all major statistical packages, library access, online academic journal access and e-mail. More information on Research Support can be found at:

<http://www.kellogg.northwestern.edu/rs/>

Conference Travel: Students admitted to Kellogg in fall 2016 and beyond are provided with a \$4,000 conference travel grant to use while enrolled in the PhD program; students must also be in good academic standing to access funds. To qualify for funding, students must be invited to present their paper at the conference and this conference invitation should be included with their proposed conference travel budget, which is reviewed/approved by the Director of Graduate Studies (DGS). This

funding may also be used when students enter the job market and attend the ASSA meeting when interviewing. Students admitted before fall 2016 would consult with the DGS and their research advisors for funding availability from other department sources to attend conferences. Note: Funding for conferences cannot and will not be approved retroactively.

Additionally, through their Conference Travel Policy, The Graduate School (TGS) provides funding for costs associated with attending academic conferences. They do not require that students present a paper, so just attending a conference would qualify for funding. Partial funding may come from TGS that is matched by the Finance Department. TGS provides two trips up to \$800 each. See the TGS travel grant website for details.

Applying for Research Funding: Students who have more substantial needs, such as funds to purchase data, run experiments or hire RAs, should plan to seek out support from other sources, both inside and outside the university. Students may submit an application for research funding through the PhD Program – contact the PhD administrative team with questions. An application needs the support of the student’s research advisor. The application requires a summary of the project and a proposed budget. This funding is for dissertation research only, and joint work with faculty would not qualify for this funding application. Faculty have other means to secure research funding. Once submitted the application is then reviewed by the Faculty Director of Kellogg’s PhD Program. If approved, funding is then released to the student by the Senior Associate Dean for Faculty & Research.

Applying to the Finance PhD Program

Our program focuses on creating scholars who have the desire and capacity to contribute to the academy for many years through the dissemination of knowledge. Our alumni actively publish in top journals, and many continue relationships that began in the doctoral program at the Kellogg School.

The Department seeks students with backgrounds in finance or economics. This may include undergraduate or graduate degrees in economics or finance, or work/research experience in finance or economics. Finance is a quantitative and rigorous discipline. As such, the Finance Department also looks for students with solid quantitative backgrounds, including coursework in mathematics, statistics, or a related quantitative field.

Applications to doctoral programs at the Kellogg School must be submitted through The Graduate School and coordinated with the Kellogg Doctoral Program. The Department accepts the GRE and GMAT exams; however, the GRE is preferred.

Further Information

If you have any questions about the Kellogg School’s doctoral programs, please contact Susan Jackman, the Administrative Director at the Kellogg Doctoral Program office.

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Nondiscrimination Statement

Northwestern University does not discriminate or permit discrimination by any member of its community against any individual on the basis of race, color, religion, national origin, sex, pregnancy, sexual orientation, gender identity, gender expression, parental status, marital status, age, disability, citizenship status, veteran status, genetic information, reproductive health decision making, or any other classification protected by law in matters of admissions, employment, housing, or services or in the educational programs or activities it operates. Harassment, whether verbal, physical, or visual, that is based on any of these characteristics is a form of discrimination. Further prohibited by law is discrimination against any employee and/or job applicant who chooses to inquire about, discuss, or disclose their own compensation or the compensation of another employee or applicant.

Northwestern University complies with federal and state laws that prohibit discrimination based on the protected categories listed above, including Title IX of the Education Amendments of 1972. Title IX requires educational institutions, such as Northwestern, to prohibit discrimination based on sex (including sexual harassment) in the University's educational programs and activities, including in matters of employment and admissions. In addition, Northwestern provides reasonable accommodations to qualified applicants, students, and employees with disabilities and to individuals who are pregnant.

Any alleged violations of this policy or questions with respect to nondiscrimination or reasonable accommodations should be directed to Northwestern's Office of Equity, 1800 Sherman Avenue, Suite 4-500, Evanston, Illinois 60208, 847-467-6165, equity@northwestern.edu.

Questions specific to sex discrimination (including sexual misconduct and sexual harassment) should be directed to Northwestern's Title IX Coordinator in the Office of Equity, 1800 Sherman Avenue, Suite 4-500, Evanston, Illinois 60208, 847-467-6165, TitleIXCoordinator@northwestern.edu.

A person may also file a complaint with the Department of Education's Office for Civil Rights regarding an alleged violation of Title IX by visiting www2.ed.gov/about/offices/list/ocr/complaintintro.html or calling 800-421-3481. Inquiries about the application of Title IX to Northwestern may be referred to Northwestern's Title IX Coordinator, the United States Department of Education's Assistant Secretary for Civil Rights, or both.