

Career Center

Resources for Exploring Careers

in Finance for graduate students without a finance background

With a Masters or PhD, you will be most competitive in a couple areas of finance: equity research and quantitative and risk analysis. Read more in-depth information about these and other career paths in our other finance guides.

Equity Research

Equity research associates' role is to support stock recommendations for investor clients. They can work for large investment banks on Wall Street or smaller, boutique investment research firms. Equity analysts also forecast stock performance based on analysis of companies in a particular industry. They usually cover a specific industry such as biotechnology, energy, software, communication, etc. The most attractive candidates for these positions tend to be those who have their graduate study in a discipline related to the industry to be covered. A good portion of the work in this area is staying up-to-date on your particular industry. Tracking news stories, publications, regulatory reports, clinical trials, etc. is key to predicting changes in stock prices.

Communication skills are also very important in equity research. The finished product of the research is a written report to be distributed to clients. Compared to academic writing, these reports are much more succinct and to-the-point. You can find published equity reports through the Duke Library. The ability to present your research and recommendations to different groups is also a must.

See an interview with a PhD equity research associate, <http://www.myscizzle.com/blog/so-you-want-to-be-equity-research-associate/>.

Quantitative and Risk Analysis

Quantitative analysts (quants) are valued in finance for their programming, analytical, and computational abilities. Quants build mathematical models and computer programs to price stocks and bonds and execute trades.

Good quants have deep knowledge of market microstructure, insight into high-frequency trading algorithms, novel stochastic calculus techniques for certain derivatives pricing regimes. Experience with machine learning is especially valued at funds. See the Risk Management resource document for more information on that path as well.

Derivative Pricing Quants, also known as "quant analysts" or "financial engineers," use a reasonable amount of mathematical sophistication, especially expertise in stochastic calculus, probability and measure theory. In addition, they require an understanding of scientific programming, usually in C++, Python, or MatLab.

Algorithmic Trading/Hedge Fund Quants almost exclusively require knowledge of time series analysis, econometrics, and statistical machine learning techniques. Sometimes even more advanced mathematics like algebra geometry, number theory and information theory is applied.

Discipline-Specific Advice

Pure Mathematics & Theoretical Physics

- Pure mathematicians from realms such as algebraic geometry and information theory are popular
- Stochastic calculus candidates can also be taken to a high level for derivatives research teams
- Ability to model physical phenomena, either through direct or statistical approaches is highly sought

Computational Physics & Engineering

- Using an algorithm to produce a robust scientific computing implementation is an extremely useful skill for quant work in banks and funds, especially for developing infrastructure

Statistics & Econometrics

- In good demand from technical quant funds, especially in the Commodity Trading Advisor (CTA)/Managed Futures space
- Time series modeling is highly valued

Computer Science

- Familiarity with statistical machine learning and Bayesian methods will be highly attractive

Bioinformatics

- Programming skills are essential, especially in applying machine learning tools to large data sets
- Brush up on (pure) mathematics for interview questions

Summarized from QuantStart, <https://www.quantstart.com/articles/How-To-Get-A-Quant-Job-Once-You-Have-A-PhD>

Leadership Development Programs

Some companies have leadership development or other finance related programs for non-finance students that can be an opportunity for you transition into this field. See this website for a full list,

<https://www.careereducation.columbia.edu/resources/leadership-development-programs>.

AT&T

Leadership Development Programs

<http://att.jobs/careers/college/full-time-development-programs/graduate-development-programs/leadership-program> (<http://tinyurl.com/ltgds5>)

Corporate Finance

<http://att.jobs/careers/college/full-time-development-programs/graduate-development-programs/finance-program> (<http://tinyurl.com/llc5vab>)

Goldman Sachs

New Analyst Program

<http://www.goldmansachs.com/careers/students-and-graduates/our-programs/americas-programs/new-analyst-copy.html> (<http://tinyurl.com/jbbwzxxw>)

Deutsche Bank

Graduate Programs

<https://www.db.com/careers/en/grad/index.html>

Additional Resources for Exploring Finance Careers

Finance panel discussion and professionals' career stories on Versatile PhD

<https://gradschool.duke.edu/professional-development/access-versatile-phd>

A brief guide to careers in finance for PhDs

<http://www.phdcareerguide.com/finance.html>

Information on quant careers for PhDs

<https://www.quantstart.com/articles/How-To-Get-A-Quant-Job-Once-You-Have-A-PhD>