

Rockwood Energy Search LLC

P.O.Box 637 Spring Lake, NJ 07762 | 732 681.2811 TEL | 732 782.0203 FAX | info@rockwoodsearch.com

Getting That First Quantitative Job —or why academically gifted people fail the screening interview.

As a recruiter with over 20 years experience in the energy business, I never get over the disappointment when a talented analyst with good grades is not invited for a second interview with a prosperous and interested employer.

While I don't have official statistics, anecdotal evidence leads me to believe almost three out of four don't make it past that first interview if they have no prior work experience. If they have worked for a while in a bank or energy company, then the odds improve, but maybe only to 50%/50%.

Not only is the candidate disappointed, but so is the employer. The employer sees the potential on the resume, but is dismayed to learn how much it will have to do to bring the candidate up to a productive state. So, the employer keeps interviewing.

So, why the disconnect?

Most quantitative resumes show experience in: a) strong applied math training, and b) formal training in financial engineering topics or informal reading in the subject.

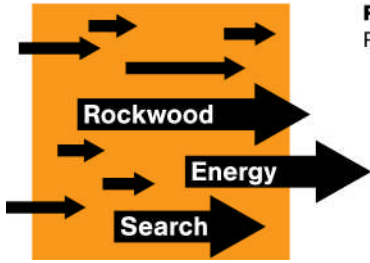
The Biggest Problem

Client feedback tells me that most quantitative candidates can't talk about derivatives in either general or business terms. They can solve partial differential equations, but when a client asks the candidate a basic question such as "what is the delta of an at-the-money option", they can't answer the question very quickly. So, they never get past the screening process.

The following is a quote from one of our most knowledgeable clients, one who really understands the issue as he has a PhD from an Ivy League school, has taught financial engineering in business schools and masters programs and currently works on Wall Street.

"Many quantitative candidates right out of school have little or no idea about the business backdrop to financial engineering. Instead of reading the business pages, they've been reading analytical papers in the journals. So, it's not uncommon for them to stumble on what might be considered basic questions."

Whether we assign the blame to the school or to the individual, it doesn't matter, since it's a problem that needs to be solved. In fact, it's not really about "blame", but the traditional academic focus on the quantitative and analytical skills mandated for educational success versus their concrete, practical application in the "real world" of business--needed for career achievement.



Rockwood Energy Search LLC

P.O.Box 637 Spring Lake, NJ 07762 | 732 681.2811 TEL | 732 782.0203 FAX | info@rockwoodsearch.com

A related problem is that there aren't as many research positions in energy or financial service firms. In the good old days, there would be a group of analysts working under a senior quantitative manager. That senior person would interface with the traders or risk managers and give work to the research group. That meant that the junior analyst had an opportunity to learn the trading language about derivatives before being directly exposed to the trading floor. Today, there are very few such groups; most analytical people work immediately on the trading floor or in a risk group---having direct contact with traders, managers and mid/back office people.

Finally, the easy problems have been solved. Today, one can go to FEA (Financial Engineering Associates) or other companies and buy Excel add-ins for most options calculations. So, there's no opportunity to learn to build simple models while becoming acquainted with the business. Instead, one must become immediately immersed in the more complex models while still somewhat unfamiliar with their end use.

What To Do

There are several levels of wonderfully bright people graduating from great schools.

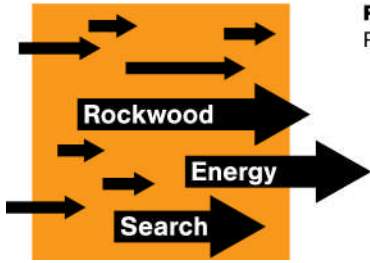
- a) Those who have a strong applied math background at the masters degree or PhD level, but no formal training in financial engineering.
- b) Those who have graduated from a financial engineering program but have no prior derivatives experience/exposure in the financial services or energy industry.
- c) Those who have both the financial engineering education and some relevant work as an intern or full-time analyst for a year or more.

None of these people should assume that he or she can do well in a Wall-Street or energy-company interview without preparation.

The acid test: Regardless of one's communications skills, a technical candidate should be able to answer basic questions about derivative instruments from the point of view of an investor or trader.

Therefore, depending upon one's academic background, the candidate will have to become educated about the commonsense view of derivatives.

What is a good measure of commonsense understanding? I strongly recommend the Series 3 commodities exam. This is an exam administered by the National Association of Securities Dealers (NASD) in order to work in a commodities sales or sales support organization. While it's not necessary to pass this exam to work in a



Rockwood Energy Search LLC

P.O.Box 637 Spring Lake, NJ 07762 | 732 681.2811 TEL | 732 782.0203 FAX | info@rockwoodsearch.com

quantitative job in a financial services company or energy company, it's a great learning/testing exercise.

One can go to www.nfa.futures.org for information.

I like the test because:

- it's not mathematically oriented so one cannot lean on one's math skills
- it uses the common language of the commodities business
- it does include some energy language and problems

This test is especially good for those in category "a", those who have no formal training in financial engineering, but it's great practice for those in category "b"--- those who have a MFE, but no work experience.

For those who have work experience, it *may* be valuable. If the work experience is in a junior role, and the candidate doesn't understand the big picture, it would be useful.

What Else Would Help?

Read a trading-oriented book on options or take a course in options trading. Since this too focuses on how one makes or loses money in options, it's very practical.

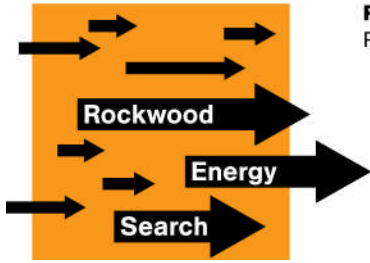
But why options and not equity trading?

Because most good quant jobs in energy depend upon options knowledge. It's a key building block for most energy transactions, so options know how is key.

In addition, one of the typical on-site interviewers is the options trader. Since options trading depends upon valuation models, the option trader gets a shot at most candidates who would work on these models. So, if you can talk to the options trader in his or her language, it's a great boost to your candidacy.

One good book is Anthony Saliba's *The Options Workbook*. He has a website and actually has an online course you can take. This book is focused on equity options trading, but is very clear and commercial. And there are other books and other groups, some more focused on energy than others.

An energy-focused website that provides training is <http://www.pgsenergy.com/>. I don't know enough about it to recommend it on an unqualified basis, but it does talk mainly about energy trading issues.



Rockwood Energy Search LLC

P.O.Box 637 Spring Lake, NJ 07762 | 732 681.2811 TEL | 732 782.0203 FAX | info@rockwoodsearch.com

I also recommend you just get on the internet and see what you can find. But make sure that whatever book or course you use, it's very applied and commercial.

And Then?

If one is truly serious about getting a job in the energy sector, one can learn a great deal by internet surfing.

For example, go to the New York Mercantile Exchange website at www.nymex.com and look under education. There is an education section on "Typical Hedge Transactions."

Read and work those problems thoroughly.

There's also a section on options and how the energy business uses them.

Finally, talk to someone you know who is bright but not familiar with options. Try to explain options concepts to them. See if they understand.

One client of ours says (only half jesting), "have the candidates explain things to their mother. If she can't understand them, then I don't want to talk to them."