MODULE 4 UNIT 1
Video set Video 1 Part 3 Transcript

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How do you prevent people getting too attached to their models, and how do you deal with them naturally wanting their models to work?

EWAN KIRK: It's very natural to want your model to work, it's like you want your children to be successful. And as I said, when you've come up with the model, at that point the really hard work starts. But, you're not ready yet to "open the box" and look in the out-of-sample. That's a long time in the future.

One of the things that people do wrongly in systematic trading is they open the box and look at the out-of-sample period way too soon. You need to stay in-sample for as long as you possibly can and that research process… We famously, at Cantab, had a model which was in the box, in in-sample period, for 18 months before we actually finally opened the box to see what happened on the out-of-sample period. I should remember to do this the other way around, of course, because the line needs to look like that.

So what are you doing at that point? Well, in the same way as you can never prove a theory is correct, you can never prove a model is correct. You can only not prove it incorrect. So you spend all this time trying to find out what's wrong with it. And that involves collaboration, it involves many eyes. Lots of people looking at a model, lots of people asking questions about it. Have you thought about this? What happens if we delay the signals? There's some classic little tests that you do. Okay, let's double the costs. Well, let's add in costs. One of the things that people don't do is they have a beautiful backtest, which is beautiful if you could trade at the mid at any time of the day or night that you want, but of course as soon as you add costs, it goes down in a straight line. So let's add costs. What happens if the costs double? Let's take certain parts of the data and do a sort of bootstrap thing where you move the data around. Let's delay signals. Delaying signals is a great thing. What happens if we don't trade now, but trade on the same signal but trade a day later, two days later, three days later? For long-term signals, that really shouldn't matter, if it's a trend model. If it does matter, that's probably not what you've got.

Also, a model is only worthwhile if it's not an equivalent model to what we've already got. If you're a pure trend follower, for example, we're not, but if you're a pure trend follower, it's very hard to come up with another trend model because the incremental value that that adds into the portfolio is very small. If you're already doing the same thing, then why waste your time on this model? You're never going to be able to tell whether or not Model A is better than Model B if its picking up the same effect, because the t-stat of the difference between the two, is almost never going to be at a high enough level that you can confidently make that decision.

So all of that analysis has to be done before you even get close to opening from in-sample into out-of-sample. And, if there's one tip, one thing that I would impress on everyone is out-of-sample, you just have one shot. You get your model to the point that you will never change it and you're totally happy that you haven't messed up in any way, and there's a lot of ways to mess up and part of the experience of doing this is every day, every week, every month, you learn something new about how you can fool yourself. But once you've got to the point that you think you haven't fooled yourself, and you think there is nothing that you

could possibly do to prove that this model might be wrong, you then open the box and look at the out-of-sample bit.

And, if the out-of-sample bit is just a flat line, you then throw everything away. There's no going back, you're done. They did that in the Large Hadron Collider. They had a group, or a set of data, which was held back and they did all the analysis on a set of data to look for the Higgs boson, and they kept a small sample set separate and they called it “opening the box,” which is really nice, opening the box of the out-of-sample and that was the thing that proved the existence of the Higgs boson.

And if they had opened the box and the model they had for the Higgs boson hadn't worked on that out-of-sample data, then the Large Hadron Collider would have been useless. So you've got to be very, very scientific about this. It's important for anybody in finance to remember that if they are quants, they are being scientists.

Now, the other thing that I haven't talked about much is infrastructure and coding. And a lot of problems are caused, a lot of mistakes, a lot of fantastic strategies, which actually turned out not to be fantastic, are caused by poor software, poor programming, poor infrastructure. That has to be really good, and sadly, gone are the days when people could build an Excel spreadsheet, or a copy of MATLAB, and come up with something which is profitable because the infrastructure required to do it correctly is so great now that it’s very hard to do that scientific analysis of what you need to do to make a model work in any other environment other than a custom built environment. And I’ll end that one big tip thing with, if you want to work in the financial industry, you have to be able to programme. If you can't programme, then it's like being a journalist who can't write.

How important is selecting the right people, in your firm and in general?

EWAN KIRK: Selecting the right people is absolutely critical, and being the right person is absolutely critical. I've probably interviewed the best part of five thousand people in my career. Okay, so I'm quite good at that bit of interviewing and you know, by interviewing, I mean interviewing quants. So what are you looking for, right?

Now, the first thing I always say is although, for investors one says we hired the brightest and the best. We don't really, because the brightest and the best should be off getting Nobel Prizes, and field medals, and those kind of things. And they're the wrong people to be doing what we're doing.

It's a common trope, what are we looking for? We're looking for people who are smart and get things done. And, that's an interesting balance, because it's not hard to find smart people. There's a lot of smart people and I'm sure there's lots of smart people on this course. Everyone's smart. Well, not everyone, but everyone I interview is definitely smart. But, there is that being able to then translate that into doing something.

We always describe, we have, you know, the phrase that you know, we don't really want whiteboard warriors. It doesn't help to have somebody to write some equations on a whiteboard. Whilst that’s useful, the only thing that really makes money for our investors is that thing which is getting those equations into something that makes money.

It sounds very mercenary, but that is our job to do that. So, we look for that. And then, for us certainly a Cantab, the thing that's important is that people get on. That sounds very

happy clappy, and okay, you know, that's also true. It is important for people to work in a pleasant, collaborative work environment. That’s an important thing to me personally.

So we have in the past, interviewed people who have been fabulous. Fabulously good great programmers, fantastic quants, lots of experience, and we've all gone, “Urgh, don’t really want to work with him”. So, okay. Well in that case, what we'll do is we'll wait for the next person to come along and there's going to be somebody who's going to be smart and gets things done that we're going to want to work with. So culture is important.

Now, the other… I probably shouldn't give away my interview secrets, but one of the things I often do in an interview is to say something that is demonstrably false and stupid. I'll just throw it into… I’ll be discussing something and I'll say something that is just stupid. Whether or not it's about programming in Python, or how you do volatility forecasting. It's just wrong, and I'm waiting for the person on the other side of the table to say, “You're wrong”. Because that's really important. Okay. I mean however hard it is when I come up with an idea and I'm talking to the team and somebody says, “Boss, that's a stupid idea”. Of course, that's a hard thing, but that's what you want, right? It must be a collaborative thing. You want everybody’s eyes on things, you want complete openness inside, and you don't want research by authority. I know I've been doing this for a long time. But, the chances are, that the 25-year-old person that we've just hired, she's probably smarter than me and she's probably got better ideas than me.

So, why should I tell her what to do? Now, there's a guiding thing, but culture and people is very important. For me personally, it's the single most important thing. If we hire the right people, and we give them the right technology, then they will do good things.

Did you understand all of the concepts in this video? If you would like to review any of the questions, click on the corresponding button.