Jonney Liu: I had my Grandma, and she would literally watch these technical analysis graphs all the time. And these guys had no idea what they're talking about, but they're just so wildly popular because people are so drawn to their money, they'll believe in anything. And if you were to ask any of these pundits if they actually put their own money in it, I doubt any of them did.

Nate Tsang: Welcome to the CoinFi Podcast. We have a lot of random conversations about crypto in the office, and we thought it would be interesting to just hit the record button and riff on whatever topics come to mind. The idea is that you get to be a fly on the wall in the CoinFi office, giving you an inside perspective on how the team members of a fast-growing crypto startup look at this crazy new industry.

The CoinFi team has an interesting mix of backgrounds. Co-founding a hedge fund to launching a Bitcoin exchange in Shanghai back in 2013, to heading algo development for major banks, to managing data science for online brands with hundreds of millions of page views a month. In each episode, we'll pull in different team members to talk about areas where they have professional expertise, or maybe even just a strong opinion.

What's up CoinFi fans? Welcome back to another episode of the CoinFi Podcast. Thanks so much for joining us. Today, we're discussing a controversial topic: Does technical analysis actually work? I'm your host, Nate Tsang, and with us are two members of the CoinFi team who are more than qualified to answer this question, Tim Tam and Jonney Liu. Say hi to the listeners, guys.

Tim Tam: Hey, guys. What's up? This is Tim.

Jonney Liu: Hey, guys. Jonney.

Nate Tsang: Tim was a hedge fund trader in a past life, with 15 years of experience trading to equity markets. He's currently CEO and co-founder of CoinFi.

Jonney Liu has 11 years experience trading derivatives. He was formerly a senior portfolio manager at a $350 million volatility arbitrage hedge fund. Most recently, he left his job to join the CoinFi team, working with us to develop signals and algorithms for the CoinFi platform.

Now, both of you have spent your professional lives trading in equity markets, and both of you have significant experience trading crypto in your personal accounts as well. Obviously, with CoinFi, we're developing signals that include various technical analysis indicators, but it's important for users to understand that technical analysis isn't a magic bullet. Maybe let's start by defining technical analysis. How do each of you define technical analysis?

Tim Tam: I think technical analysis, for me, is using price charts and indicators to try to predict which way a stock, or in this case coin, is going to go, just looking at that and not looking at any fundamental data.

Jonney Liu: Yeah. So, I think technical analysis, which has had actually quite a long history, is basically using price and volume data to come up with indicators and signals that help predict maybe what the future price movement might be.

Tim Tam: But, in terms of future price movement, is it like short term future price movement or long term future price movement, or both?

Jonney Liu: Well, it could be both. It just depends on what indicators you use and what numbers you put in. But, anyways, does technical analysis work? I think that is a very, very interesting question. I'm kind of in between here. I think it does work, but it's actually largely misunderstood.

Tim Tam: And why would you say it's misunderstood?

Jonney Liu: I think it's misunderstood because we see a lot of people, and also a lot of soft media we read, and also a lot of charts that we share, especially in crypto, where people just draw charts, and then the people who read them, they actually don't do any work to understand what these indicators are or why these charts are forming a pattern they're forming, and they accept it to be true.

That, to me, is actually very, very dangerous. Because, at the end of the day, I could draw any kind of chart, and I could make some sort of confirmation, right, but who's going to challenge me? If you don't know how I calculated these numbers or how I drew this chart, who are you to challenge me whether it's right or wrong?

Tim Tam: So, I think on that, there's an interesting point. For example, a lot of people will call "trade breakout". What a breakout is, they may chart something, they see a certain resistance level. If a print’s like at an all time high. If it tested that level a couple of times and finally on the third time it "breaks out", i.e. it makes a new high, I think, correct me if I’m wrong, you know more about technical analysis than me. But I think the fundamental reason for why breakouts traditionally have worked, the logical reason is, a lot of people set stop-losses at those levels.

So basically, if people may be sure and it breaks through a certain ... maybe 1% above the previous high, there's an automatic reorder there to cover their short positions, so it causes a short term price movement. And a lot of people will trade that breakout.

Jonney Liu: So, that's a very astute way of looking at it. I think that it's probably the right way of looking at it, but most people don't look at it that way when they look at technical analysis. They just say, "This is resistance level, and once it breakout, it has to go through". They don't think about the underlying reason, which is also another reason that they don't understand ... They're not really asking why is it breaking out, but you're saying, "It's breaking out, therefore it must go up". When in the case that it might actually go back down again ...

Tim Tam: So, for me, I definitely use technical analysis. I use support and resistance lines, but for me, I overlay it with my fundamental view of a lot of other data points. So I generally think I use it a little bit more for timing. For instance, I personally think, and don't quote me on this guys, but Bitcoin is 6,000. It's a good level to buy, because I'm fundamentally bullish on crypto. I think we're at the start of a major bull cycle, I've mentioned this before. And, we're roughly at more than 70% above all time highs for crypto. So, to me, I'm happy to buy it, because it's corrected 70%. I'm fundamentally bullish on that.

Jonney Liu: The RSI is probably pretty low as well.

Tim Tam: Yeah, and so I'll use these other data points to look at it, and if you look on the chart, Bitcoin between 5,000 and 6,000, it's a support level as well, so that's kind of how I use it, as another data point for my analysis.

Jonney Liu: So use it as an enhancer of your belief?

Tim Tam: Yes, but I think it's one of those things where I'll look at four, five factors, which will point to "Is it a buy level?", or is it a good time to invest, is probably a better way of saying it, and then technical analysis is one of them. So I'm not as quantitative as you, so I look at all those factors, and then I make a decision. Overall, is it positive or negative? And, look, it doesn't matter what the resistance level is if I don't believe in Bitcoin I'm not fundamentally bullish.

Jonney Liu: Okay, so that's fair. I mean I actually look at it a very different way, because for me, technical analysis is almost like the earliest form of quantitative investing. Because instead of saying, fundamental analysis, which is the Ben Graham school of trying to value a company, figuring out its different accounting ratios. Technical analysis is just purely looking at price and volume and trying to figure out where the market is putting their money, and hopefully if you find some ratio that describes the price action, therefore tells a story, like you said, it breaks out over 7,000. That means that it's never broke out before, but since it breaks out, a lot of people are confident, and stop-losses might be broken or anything bad, then those things become useful.

So, in the form of quantitative investing, I always look at it as a testing strategy. So for me, there's no point saying, "Oh. RSI twenty, you have to buy." I would ask the question, "Is when the RSI goes twenty, and if we bought, is this a winning strategy?" And that becomes a testable, investible strategy, rather than saying, "This happened once, and therefore it's going to happen again", because you have no idea if it's going to happen again. But if something happens ten times, and nine times it did what you expected it to do, then there's probably a high chance it might happen again.

Tim Tam: So I guess a takeaway for, me listening to you, is the way you would do it is you look at, say, there's a lot of people who promote technical analysis and a lot of different strategies. So let's say I want to buy when RSI is twenty. Or like another case, does trading breakouts work? As long as you can get that data and plug it into a historical model to see how successful it is, then that will determine for you whether it's a winning strategy, and then whether you want to run it.

Jonney Liu: Yes, because the problem with technical analysis on the web, on the most part, is they're just saying, "You should buy here" ... There's no data backing it, and ... their guess is as good as yours.

Tim Tam: You mean the dinosaur chart pattern doesn't work?

Jonney Liu: Yeah, the best dinosaur park chart pattern. I think it definitely works ... sarcastically obviously.

This is where technical analysis becomes like astrology. There's absolutely no science in saying that people who are Virgos are more compassionate people. I mean there's no basis, and it becomes self-fulfilling, actually. The biggest irony is one of the most famous ones is when the slow moving averages cross the lower term moving average. So the most popular one is the 50 day over 200 day moving average cross.

So for those who don't know moving averages, 50 day moving average, literally, is the last 50 day closing prices. I take the average, and I take the last 200 day prices average. And if the 50 day crosses above 200 day, it's said to say that the fast-moving price is going above the slow-moving price, and we're going to have a breakout.

Whether you believe that works or not, and actually, I've tested it before. If you do it across many futures, it seems to work pretty well and has a pretty good Sharpe ratio. But the funny thing is that at some point in time, everybody knows about this, it becomes like a self-fulfilling prophecy. As soon as the 50 day moving average is above the 200 day moving average, everybody is buying into it because they go, "Hey, it's going to break out again". Even though there might be some quantitative things behind it, if everybody believes in it, then it's almost like willing it to be true.

Tim Tam: So I guess your conclusion, really, is it doesn't really matter. I mean, it's good to understand the fundamental reasons why something works, but the conclusion is, "Take your hypothesis, test it, and if it works consistently, then use it".

Jonney Liu: Yeah, use it, and obviously you have to realize that it might not happen the same frequency as you did before. But at least you tested it. You've done your homework. Trying to say, "Hey. It went above 7,000", and trying to find ten other reasons, it's just confirmation bias, because technical analysis, by definition, is supposed to remove you from that emotion. It's like, "This is what's supposed to happen", and it doesn't care about your emotion.

Tim Tam: But what about, I'm playing devil's advocate here right, but you know that the 50 day crossing 200 day moving average, you take that strategy. It could have worked very well, because effectively, that's a momentum strategy, so it would have worked very well in the last three years. But is it because that strategy works? Or is it that strategy works well in a bull market?

Jonney Liu: So, there's two points I would like to make there. The first point is that ... obviously certain strategies, just say this 50 day over 200 day, will work during certain periods of time. And there's no guarantee that it might work ... further in the future. But, at the same time, when you test your strategy, you have to take data points where maybe the price wasn't as momentum driven as well, and it was mean reverting, and say, "Hey. Can it withstand these losses?"

So for any test obviously, if you put the best data points in, it's going to show you amazing tests. You can make any test look great, but then you have to be realistic about how likely it's going to be like that forever. So maybe then you might put in some points that don't happen to have that.

Tim Tam: That makes sense, and look, I think we're in agreement. I think the strong conclusion I have is a lot of people espouse technical analysis without any kind of data backing it up. So as a minimum, you should run some tests and run some back tests to see how those strategies perform.

Jonney Liu: And yes, exactly. Anyone can go read a book about technical analysis and become a pundit. It actually happens in real finance world. I don't know if you know this, but in Taiwan, there's about a hundred TV channels. Thirty channels are purely finance. This is for readers that know Taiwanese, and I have a very strong view about this. But I had my Grandma, and she would literally watch these technical analysis graphs all the time. And these guys had no idea what they're talking about, but they're just so wildly popular because people are so drawn to their money, they'll believe in anything. And if you were to ask any of these pundits if they actually put their own money in it, I doubt any of them did.

Tim Tam: Yeah, I think it's interesting. I don't know if we're going off track, but why are people drawn toward these things? And why is it historically that these things do so well in convincing people that they work? My personal opinion is I think trying to make money and trying to win is almost like a gambling streak. I think most people kind of have that gene in there. People want to be told that there's a system that works consistently for them. That they can just copy, and they're going to make money.

Jonney Liu: I think they're lazy, that's why. I think people are inherently lazy. I think when someone tells you that this is a way to make money, your instinct should be, "Wait. Why are they making money? How are they doing that? Where did they get that data point?", rather than saying, "Here's my money. I'm going to do exactly what you say." That's exactly what irks me a lot about technical analysis. It's been giving me a bad rep, but actually, some of the indicators I do find quite useful.

And I'll give you an example. From around 2003 to 2007, these funds called CTA funds, they were doing immensely well, because there was a momentum market. We were pretty much going up and then ... Actually, even did pretty well in 2008, because before we had a big, big drop, we were already starting to slant downwards. So they actually managed to go short. So these funds were massively successful, and what they did is, they just ran really basic technical ... even the 50 day over 200 day moving average, but what they did was that they didn't do one future. They did it across five hundred different types of futures, from corn to oil, to the S&P, to the Hang Seng, to the NIKAY. And they kind of did it as a system where they averaged out all the losses, and the winnings kind of amplified themselves.

So in that case, it works, because they're running as a system. But when someone tells you TV, put your money on this Fibonacci retracement, that it's going to breakout at this point, it doesn't work that way. Your quantitative strategy has to be something that, where you do it a large amount of times to confirm that your probabilities are correct.

Tim Tam: And I think that's what I love chatting too about, because I think we are very similar in our investment views and strategies. In a certain way, we're also very different where I think one of your strengths is, "What is something where I can predict, where I'm right more than 50% of the time." And once you find something that you can do that continuously, you quickly find a way to scale it. And that's how you make a lot of money here.

Jonney Liu: Yeah, pretty much.

Tim Tam: So that's CoinFi's secret, is it?

Jonney Liu: What's that? That's anyone's secret to ... You know how people were counting cards in blackjack in the 90's, even the 60's? You got to realize their edge was literally one, two percent ... but they were able to make a lot of money because that one, two percent of certainty that you make that money, you can actually amplify it a lot.

And it's not so different from running a very large CTA fund, where they kind of put their bets on many different places, because they don't have 100% certainty that they have 52% chance of winning. They probably have a 60% certainty that they have a 55% chance of winning, so in order to reduce that uncertainty, they kind of hedge themselves in many different markets.

Nate Tsang: What about the technical indicators out there? For you guys, which are the most relevant ones in your trading?

Tim Tam: For me personally, again, all I emphasize for me, technical analysis is a tool chain that I use on top of fundamental analysis and all these other factors I look at. But for me, specific on technical analysis, I use support and resistance levels over and over again as entry points and exit points, and then I'll also look at volume as an indicator around those points. So there's a huge pickup in volume on a breakout, that's always very interesting to me.

Jonney Liu: Yeah, for me, because I view technical indicators as a quantitative measure that can be back tested, very simple things like RSI, testing whether that works, or moving averages crossovers, to see whether in the long run becomes an investment strategy. They're the things I pretty much look at.

Nate Tsang: Thanks for listening everyone. We hope you got something out of this conversation looking at technical analysis from the point of view of two experienced professional traders. If you enjoyed this conversation, why don't you let us know which technical indicators are most useful to you. Head over to coinfi.com and let us know in the comments. Thanks to Tim and Jonney for taking time out of their busy day to share their thoughts. Be sure to hit subscribe, and we'll catch you guys next time on the CoinFi Podcast.

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That's all for this episode. See you next time.