IFB298: Causation Is Not Correlation

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Dave

0:00

Alright folks, welcome to Investing for Beginners podcast today we have episode 298. Today, Andrew and I are going to discuss causation and correlation in the stock market, and maybe some ideas behind those concepts. So with that, why don't we go ahead and dive in and talk about something called beta. This is something we talked about we back yonder. And we thought we'd maybe we touch on this again. So for the folks out there that are wondering, what is this Greek symbol, I'm talking about? What is beta? What is beta? And how does it impact the stock market or stock?

Andrew

0:33

Question? Beta is a correlation measure. And people generally use it to paint a picture about a stock. So as an example, if you have an iPhone, which you should, you can click in their stocks app, and then there's going to be, you know, obviously, on the stock chart and the stock price, and you have some other metrics. And if you scroll over to the right, they have yield, beta and EPS. So we're talking about that component called beta. And what it's trying to measure is what is the correlation versus the stock market. So as an example, if the stock market were to drop by, and I'm really simplifying the math here, so the concepts the same, though, if the stock market was to drop by 20%, and a stock dropped 40%, every time the market dropped 20%, it's 20 times more extreme in that price movement.

And so it's beta would be two because it's two times twice as extreme. That's what beta measures. So if a stock has a beta of one, every time the stock market drops, 20%, the stocks probably going to drop 20%. So you have stocks that are lower beta. Examples of those can be stocks that do well during a recession. So

think like Coca Cola, Pepsi, I guess maybe McDonald's to a certain extent, some of these more grocery stores would be good ones, Walmart, the ones Walmart's a good one.

Yep, exactly. Those are lower beta. And they'll tend to have a beta less than one. Because if the stock market crashes tomorrow, because there's going to be a recession, people are still going to go to the grocery store and go to Walmart and get their groceries. On the flip side, if you have like, the old school steel makers who need a booming economy to be able to ship out all the steel. And if the recession happens, and the steel makers is going to crash 40% Well, maybe the betas two or three or four, depending on how that price moves. So that's kind of in a nutshell, the basic concept behind beta I guess, how would a beginner investor use that in practical application? Or kind of how does that provide the usefulness to somebody who's looking at a stock?

Dave

2:51

I think, well, outside of the use of it, and valuation, I think the thing that I would use a thorough look at is it going to tell me, in rough terms, maybe how much volatility I can expect, in the stock price, especially compared to how the stock market itself moves. And so if you see a company that has a beta of two, I would probably expect there to be a lot more volatility in the price of the company, as I'm holding it, maybe compared to what's happening in the stock market, it wouldn't necessarily mean that, you know, if it has a two or three, that if the stock market goes up, it goes down, you know, twice as much. It may not.

But I think, you know, the way I look at it is it tells me how much of a bumpy ride can I expect, if I own this company, if it's a one, or 1.1 or point nine, it's going to flow along pretty closely with the stock market. But if you see higher, more extreme numbers, like point one versus 2.2, you're gonna see probably a rougher ride, if you hold the company for a longer period of time. And that's something you can expect. I guess that's kind of how I look at it. What are your thoughts?

Andrew

4:03

I'm glad you brought that up. Because if you look at a stock, like how Tesla has been from, call it 2013 to 2021, I guess it was a very bumpy ride, but it also went straight up for a lot of its ride. So you wouldn't say that it correlated with the market because the market was a lot more down than Tesla was. So that betas can be all out of whack. And then on the flip side, if you have a company that goes bankrupt, their stock prices, keep going down, down, down down down the bay, that might not tell you anything, because it's a stock price that goes down. So I'm glad you mentioned that it can tell you, ups and downs are going to be

more or less extreme than the market but it's not always necessarily the case. It's it's a very broad rule of thumb.

Dave

4:51

Yeah, it is. And I think you know, and correct me if I'm wrong, but I think a lot of people also associate beta with risk and I don't correlate that with risk. And to me, it's more about volatility and the movement of the stock prices, as opposed to riskiness of the stock, you could argue that they're one in the same, you know, if you think of a company that has a really high beta, it's also going to have a lot more fluctuations, it could have a lot more fluctuations in the stock price. And that could lead to more risk investing in the stock.

But when I think of risk, I think of risk of losing my capital. And depending on, you know, a company that has a high beta doesn't have a higher correlation to a bankruptcy than one that doesn't. It's more about the stock price and the movement of the stock price. And typically, typically, not always, but typically younger companies, especially like younger tech companies, they usually have higher betas, because you see lots of fluctuations in their stock price. Because the market moves on news of the companies are more than it does on Johnson and Johnson and Coca Cola.

And so in relation to those, then you're gonna see a lot more movement, you know, if news comes out the CrowdStrike had a great quarter, you're gonna see a huge boost in stock price, vice versa, if poor news comes out, then there, you're gonna see a big drop in in the stock price. Whereas, you know, good or bad news with Coca Cola may not move the price of the stock that much. And so that's not really risk. That's just that's more volatility. And that's part of investing in the stock market. And it's a feature not a bug kind of thing. I've seen that a lot. But I guess what are your thoughts on that idea of beta, kind of equating to risk?

Andrew

6:34

I would say it's, the causation doesn't go both ways. So I would say a business that's struggling or about to fail, would cause the stock to have a high beta, because there'll be a lot of investors freaking out. But the stock with a high beta doesn't, like you said, doesn't mean a struggling or more risky business. So it's not two way street. Right?

Dave

6:56

Yeah, I totally agree with that. And I think a lot of people sometimes, again, correct me, if I'm wrong, a lot of people will look at beta. And if they see a number that's high, and you associate that with volatility, that means that you could lose money on the stock. But that's only if you're planning on trying to make investment decisions based on quicker terms. So if you're looking to buy a company, and I only want to hold it for three months, then if you look at the beta, and it's really volatile, then yeah, you could lose money.

Because if you're buying it now, and then you want to sell it in September or October, there's a chance that you could lose money in an investment. But if you buy it today, and you want to hold it for the next five years, then I think beta becomes less of an issue as far as you losing money, because the volatility, hopefully would smooth out by then, because the business that underlies the stock ticker, would start to perform more consistently over that period of time. And there would be less volatility. And so the beta would come closer to one over a longer period of time. And I stir the pot with a course throw away,

Andrew

8:02

I would say depends on I mean, I know you weren't saying like this is how it always is. But I think in certain cases, to use your example of whatever latest new innovation stock comes out, and it's this hot stock, give me like a recent IPO, I guess we haven't had any real money, but

Dave

8:19

cava, the chipotle style business that just went public.

Andrew

8:24

Yeah, so I assume their Beta is gonna be really high, because it just IPO and the growth is probably crazy good. But that's revenue growth. And so those types of names will have a lot of investors who are very short term focused, or they don't tend to stick around the long time. So that situation, I would say, Does signal a more risky, the presence of the stock moving up and down violently, does indicate that it's not going to be a good investment, because the type of investors that are in there are all speculators, right. But if you have a really great business that just maybe is going through a crisis and public relations or something, but it's still good underlying business, right, then it totally doesn't mean that there's a lot of risk of that and losing capital in that business. Right. Yeah. So you can kind of argue it both ways.

Dave

9:22

Yeah. Yeah, you could. Yeah, you could for sure. The idea of the investor base, turning over kind of a sidebar, I was listening to an interview with the CEO of Uber. And Uber is a company that's been around for a little while, but they IPO I don't know 656 years ago, and that has been a very volatile stock and so they had a very high beta. The CEO informed us in the interview that they turned over their investor base. So the early people that were in the company have all basically turned over and now investors that are buying them for the company is starting to become free cash flow positive, their Beta is starting to smooth out.

So it's a different kind of business. And it's a different kind of investment. And so their investment investor base is turned over, which helps more, I guess, normalize the beta for the company, because like you said, there's less speculators in there. And there's more long term focused investors that are that are investing in a company now. So that has caused the beta to kind of smooth out, it's not quite as bumpy as it used to be.

Andrew

10:27

That's a perfect example of that investor base kind of changing and, and so to kind of continue that example, if beta was hypersensitive to the economy, which I'm not saying it is or isn't, but let's just pretend that every time the economy jumped, it doubled, and Uber quadrupled. And then every time that had the recession, Uber had even worse recession.

So it was a super high beta, because the earnings were so up and down, then that's the now you have like the two extremes of correlation, one indicating like the beginning, you're probably going to lose some capital if you invest, because it's kind of like a casino in that in that instance, the other is just a stock or a business, that's just very dependent on the economy, but in 10 years, it will probably still be a good investment. So it's maybe not as risky. That's how I tried to look at it differentiating between those two things. Yeah, that makes sense. Are there any other ways you use beta, when you're looking at the stock analyzing the stock,

Dave

11:29

I use it as part of I use it as part of a formula to determine a, a, a hurdle rate or a discount rate or an investment rate that I want to earn, when I'm trying to value a company, it's part of the cost of equity to determine how much that cost is if the company uses that to try to generate money to invest, when companies invest, they have two different ways that they can raise Capital One is they can take on debt, so

they can issue bonds, people invest in the debt of the company, and the other one is selling shares or selling equity in the company.

And there's costs associated with those. And beta is part of a formula that you can use the cost of equity formula to help determine how much that cost would be if I wanted, you know, let's say that the company sold their equity to raise money, how much would that cost me as a shareholder? And what kind of investment would I have to get? How much would the company have to return to me to overcome that, so that I get a decent return? And so if the cost of equity is 10, then that's my cost to invest in the equity of the business. And if it doesn't earn at least a 10% return, then I'm losing money on the investment. And so that's, that's part of beta is can be complicated, but it's part of that cost of equity formula that I use to value companies. What about you?

Andrew

12:51

Yeah, I use it as well. So it is one of those that it can be, you can make it really simple as a beginner and just kind of know the basics of it. But you can also know that it is used in finance, and it is used to to make the price of a lot of different stocks in the market, especially if they're more on the mature side or the free cash flow side, like, like where Uber is starting to get into. That's how the analysts will use it. And for the same reasons that you're talking about to make a discount rate. And because a higher higher variance, and free cash flow means you can't value last year's cash flows as high because it's variable. That's the way I use it. Similarly,

Dave

13:34

a side note on that, if you're curious about what we're talking about, go to E investing for beginners.com and search bar at the top of the page, type in cost of equity. And you'll see some articles there that we've written about the cost of equity to help explain it a lot more in detail. Sometimes numbers are hard to go over on the show, because you can't see them. So I think that's a better way. If you're like, What are they talking about? I want to learn more about this. That's where I go. Alright, so now that we've kind of talked about beta, and we've danced around this idea of causation and correlation, when we talk about those things, what exactly does a causation versus correlation mean? Well,

Andrew

14:09

I guess for the stock market, or in general, I guess, for the stock market for us. Okay? Because I don't want to go down the route of what I think's causes. So I guess for the stock market, there are some things that have causation that some things have correlation. And I think this is something that doesn't come naturally, or it's not something you learned as an investor. It's not in like chapter two of investing 102 or something. So like, for example, we talk a lot about how if you buy stocks, you're buying part ownership of businesses.

And as those businesses grow over the next 1015 20 years, you're gonna get your stock investments to grow in value along with them. So there's a correlation there over the long term because as the business becomes more valuable so those your stock But there's no causation in the short term. So for example, if Uber was to increase their profits by 30%, next quarter, that doesn't mean your stocks going to increase by 30%. next quarter, and that's its own can of worms. But that's something that I don't think I knew when I started, it didn't really make a lot of sense to me. But it's, I think it's a valuable lesson to learn because then you don't get surprised when that happens. Like, what do you mean, my earnings are up? 11%? Outcome? My stocks are up 1%? What's going on here?

Dave

15:33

Right? Or why did my what happened? You see this all the time? Why did what happened? Why did the stock price fall 7%? Today, there's no news. There's nothing that happened. And all of a sudden, it's down 7%? Why? Right? There's no easy answer. For those things, a lot of it is because when you're dealing with the stock market, you're dealing with a complex system of a lot of moving parts.

And a lot of human beings investing in the stock market. And so the tide will, you know, the crowd will move or sway a particular company from time to time. And if a large user base of investors in, you know, in Uber, decided that they think that the company is now worth 5%, less than it was today, even though there's no news that come out, it will drop 5%, because a large user base has decided that they want to sell it for 5%, less than it's worth 5% less than it was yesterday. And other people may buy that thinking, hey, you know, hey, I got a deal on this company. So this because of the nature of the of the complex kind of system that the stock market is, there's going to be movements that sometimes make no sense. And you can't reason with it, it's just because it's it's all hive mind a little bit. And, you know, there's all kinds of forces that move, the way prices move on stocks.

A perfect case in point for me is that I talked about this for a company that I own, out of the Netherlands called agenda, it's a payments company, they report earnings twice a year. So, you know, two times a year, we get information from the company about the financial condition, position of the business, but the stock

price moves all over the place all the time. And why there's no logical reason for that. It's just because of the nature of the stock market and other people investing and fears of, you know, the economy in the Netherlands or fears of the economy in Europe or fears, the economy, United State, whatever, any of those kinds of things, you know, bad news here can relate to there. And it's not always causation is correlation. But sometimes there's dis associations with the news. And that can lead to changes in price. And again, it's a feature not a bug. And it's part of

Andrew

17:59

investing paths. How big is origins market cap? Roughly? It's around 50 billion ish. Okay. Yeah. So something I saw that was interesting. The stock pic I recommended for July was the big one. Right? Right. One other, it was about 2 billion out of the 50 billion market cap was a Vanguard REIT fund. So just think about that for a second, like investors who are buying a REIT fund, because they want real exposure is owning a large percent of that company and probably moving the price, right. And then you think again, like like, for me, for example, I have my fun money account that I like half heartedly will save up for stuff that I want to buy, but I'll put it in stocks in the meantime, and then something comes up and I'll sell some stocks. And then you know, there goes that money. And so it could be a reason I, if it's on my fun account, I could have sold it for a reason I had nothing to do with the stock.

And then you think about people in the economy when they get raises or bonuses. I'm going down a rabbit hole just cut from from where I was with the REIT thing. Okay. There are other things that can move a stock you mentioned that could be completely random. You know, I just mentioned how there are a lot of ETFs and mutual funds that really the people who own those don't even know what's underneath it. So if I ran on Wall Street Journal that real estate's a bad place to invest right now, and I'm not really deep into what's going on with the stocks that are underlying I might sell a REIT ETF, for example, right. So other things that move the price other than some of the stuff we've discussed already. It's a good

Dave

19:46

question. You know, the things that I mean, the things that I always associate with moving the stock price are any sort of news that comes out about either that company or about this sector or the economy that that business operates in the ownership, like you were mentioning, and definitely move it. And sometimes it can be that the ownership like when we're talking about ETFs, or more active managed funds, they have targets to meet. And so sometimes a lot of them will move in and out of companies because they're trying to achieve certain returns.

And let's say that they feel like you know, pick on Argent for example, they feel like that, now Arjun is not going to get them the return that they need, they may dump that company and move on to another shiny object to try to get a better return, because they think maybe over the next seven weeks that this company is going to get a better return than Arjun will over the next seven weeks. And so they will move in and out to try to maximize their returns over a longer period of time, because they're bonused on that, they also can attract more people to invest in their funds, if they meet certain marks. In other words, if they beat benchmarks, and if you don't do that consistently, then fund managers can get in a lot of trouble, they can lose clients, they can lose their job, eventually, certainly lose a lot less money.

So there is a certain portion of the market that is based on that kind of activity. And so they will be moving in and out of those things, you know, and then there's just, you know, the general, sometimes it's just the general mood of the world move things, you know, up and down. Perfect example is COVID. Everybody was terrified when that first happened, and the stock market dropped 40 50% in a week. And that was unusual at the time. And a lot of it was based on fear because nobody knew what was coming. And it was happening. And so we all thought it was the end of the world. And so we sold everything.

So there can be lots of movement in the markets, unrelated to the stock price. And to me, that's something I just didn't know, when I started. I guess the last thing that maybe we can kind of touch on with this kind of idea that causation and correlation is, let's say the loan Texas Instruments, great company solid business, and its earnings grow by 10%. Over the next 10 years, is there a guarantee that the stock price is going to match that and grow 10% a year? Are they perfectly aligned?

Andrew

22:09

It's not perfect? No, it's not. So you can't say that like, yeah, every time Texas Instruments or a company like them grows 10%, I'll get a 10% return. But if you look at large amounts of data, and people have done that, lots of people done that. Guys like Warren Buffett have been investing for 60 years, and they've noticed it. In most cases, if a company grows at 10%, a year for 10 years, it stock will grow at 10% a year for 10 years.

If a company grows at 12%, a year for 12 years at a time that stock will grow 10% or 12 years, obviously, you still get the same fluctuations at the beginning and the end. But the trend along it will follow the business. And to quote Benjamin Graham, like you always do so eloquently. In the short term, the markets have on a machine in the long term, it's a weighing machine. And that's because most investors are buying based on what the business can produce. So if they can produce more in 10 years, and they did the 10 years prior, it's

going to be worth more. And so it's not a perfect correlation. But it's a general long term trends, I would say, Yeah, what do you think?

Dave

23:20

Yep. And so for me, the takeaway from that data is, when you own a really good company, the way you're going to benefit from owning that really good company is by continuing to to hold that company for a longer period of time, because you're going to see peaks and valleys that we talked about with the beta, that kind of idea will smooth out over the 10 years. And so as Andrew was saying, it may not correlate exactly 10%, it may be 10.1%.

And it may be 9.99%. But it's been a match pretty closely, but in the years intervening, it may be all over the map. And so that's why holding the company over a longer period of time is going to benefit you in the long run. And that's why we try to encourage people to try it. Try to do that as much as we can. Yep. All right, everyone. Well, with that, we're gonna go ahead and wrap up the show for this week. Don't forget to subscribe to the show on your preferred podcast app if you enjoyed our little show.

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