

Michael Mauboussin and Saurabh Madaan on Expectations Investing

Saurabh Madaan, Managing Member of Manveen Asset Management, and Michael Mauboussin, Head of Consilient Research at Counterpoint Global, Morgan Stanley Investment Management, joined members for a fireside chat at Latticework on December 15, 2021.

Saurabh and Michael explored the topic, “Expectations Investing as Applied to Growth Businesses”. Michael is co-author with Al Rappaport of the revised and updated edition of [Expectations Investing: Reading Stock Prices for Better Returns](#).

This conversation is available as an episode of “Invest Intelligently” and “Explore Great Books”, member podcasts of MOI Global. (Learn [how to access](#).)

The following transcript has been edited for space and clarity.

John Mihaljevic: A very warm welcome to all of you joining us today for this live session at Latticework 2021 featuring the one and only Michael Mauboussin, hosted by Saurabh Madaan. The topic is expectations investing as applied to today’s growth businesses.

I’ll say a few words about Saurabh and then ask Saurabh to introduce Michael properly and lead this conversation. Saurabh serves as managing member of Manveen Asset Management based in Glen Allen, Virginia. Before founding Manveen Asset Management, Saurabh was a managing director and the deputy chief investment officer at Markel Corporation where he worked closely with Markel’s co-CEO, Tom Gayner. Saurabh also spent more than seven years at Google in various roles, including senior data scientist and engineering. He holds an MS degree in engineering from the University of Pennsylvania.

I am honored to have known Saurabh for many years. He is the kind of person who provides a lot of value to those who come into contact with him, and makes those people feel like the center of attention. I remember back in the day, Saurabh, those talks at Google that you hosted — those were like Khan Academy before there was a Khan Academy. They were amazing.

Over to you, Saurabh, to say a few words about Michael and get us launched into this conversation.

Saurabh Madaan: Thank you, John, for those kind words. It reminds me of something I heard a friend say recently: “I am luckier than I deserve to be.” That’s how I feel. It’s a delight to get the chance to host this conversation with Michael because he is not only an outstanding thinker, but also an extremely generous friend and teacher to so many of us, whether we were in his Columbia Business classroom or on Twitter or just reading his books. He is our teacher. He is our friend. He is our inspiration.

Michael is head of consilient research at Counterpoint Global, the author of several best-selling books, and adjunct professor of finance at Columbia Business School where he is on the faculty of the Heilbrunn Center for Graham & Dodd Investing. He received the Dean’s Award for Teaching Excellence in 2009 and 2016. I can keep running through the list of accolades — we could fill the entire hour and still have a long way to go — but suffice to say that he is the kind of person who has, as Charlie Munger would say, a broad latticework of excellence across multiple fields.

Prior to joining Counterpoint Global, Michael was the director of research at Blue Mountain Capital, head of global financial strategies at Credit Suisse, and the chief investment strategist at Legg Mason Capital.

There's a lot to Michael, but what we are here to talk about is that Michael is the co-author with Alfred Rappaport of *Expectations Investing*. The first edition of this book was published in 2001, and the book has made a significant impact on a generation of value investors. We are here today to speak with Michael about the revised and updated second edition of this book that comes almost two decades after the landmark work was originally published.

Michael, thank you for taking the time to be with us here today. It's been eight years since we had you at Google to talk about your book discussing skill versus luck. I have been a fan of your work. On behalf of your readers and students, thank you for being a teacher to all of us. Could you set the stage by talking about what got you into writing and why you decided to release a second edition of the book two decades later?

Michael Mauboussin: Thank you so much. You're so gracious. I had a wonderful time with you as my host at Google many years ago and have fond memories of that. You were not only kind to me, but also to my whole family, so I appreciate that.

I was a liberal arts major, not an engineer, although my parents wanted me to be an engineer! I went on to Wall Street in the mid-1980s and was quite overwhelmed by the lingo and the rules of thumb that people were using. At one point, I was in a training program at Drexel Burnham Lambert, and one of the guys in the program gave me a copy of Al Rappaport's book *Creating Shareholder Value*, which was a professional epiphany for me. In the same way that people tell me my work has influenced them for the better (and I'm very grateful for that), I can say that this book completely changed my professional career.

There are three things that Rappaport talked about that I think all of us in the value investing community appreciate.

The first is that it's ultimately about cash and not accounting numbers. Even though he made that argument in the 1980s, the argument is even more pressing and important today than it was back then. We can come back and talk about that a bit.

Second is — and I think people lose sight of this; I might tweet about this in the next few days — that competitive advantage or competitive strategy analysis and valuation should be joined at the hip, because if you want to value a business properly, you have to think about the competitive position of the company within its industry and what its prospects look like. The litmus test of a strategy, if you're an executive, is that it creates value. We know that those two things are intimately related. Interestingly, in business schools, we do a bit of a disservice to our students because we teach those things separately. Everybody knows they're both important, but as you become an investor, you're operating at the pure intersection of those two things — not one or the other. They work together.

The third and final thing — and it was actually in a chapter for executives, although it was called stock market signals for managers — is that as an executive, if you want to create value for your stock price to deliver excess returns, it's not enough just to earn above your cost of capital on your investments or even meet the consensus. Rather, you have to meet or exceed expectations over time. That has important implications, not only for remuneration, but for capital allocation and so on. Clearly, that argument of why executives need to understand their stock price is the opposite side of the same coin of why investors can use that same thing.

I started using the Rappaport research. At the time, he had a consulting firm which had software, and I somehow persuaded my bosses to buy that software. I was a junior analyst, but I was doing a lot of analysis using the Rappaport methodology. That allowed me to meet him in 1991. That was about 30 years ago. It was a thrill for me. I thought it was the apex of my whole career, just shaking the guy's hand. He invited me to join the faculty for the executive programs at Kellogg where he was a professor, which led to our deepening relationship.

At one point, in the late 1990s, he suggested we take these ideas that I'd been working on from the investor side and marry them with the ideas from *Creating Shareholder Value* to write *Expectations Investing*. I should provide the context, because we signed the contract for the book in the late 1990s which was a bit like the period we just went through: everything was going up. Everybody's excited and everybody's doing their E-trade accounts or whatever it was back then.

The book actually came out on September 10, 2001. Just think about that for a moment. It was the day before a national tragedy, and — much less importantly — in the midst of a three-year bear market. We signed it when things were as hot as they could be, and the book came out when things were as cold as they could be. The book was fine. I think it did have an impact, and of course it influenced my teaching and so forth.

Over the years, obviously some of the case studies got old, plus there were some new developments in markets, including things like from public to private, from active management to indexing, and the rise of intangibles. There were a number of things that came along. In some ways, going back through it all, I was gratified that many of the bones of the arguments have held up pretty well, including lots of stuff around the core ideas around valuation, but there were still a lot of ideas that we could update, so that was the genesis of round two.

Although Rappaport is now in his late 80s, he's still phenomenal. I talk to him all the time. I talked to him twice yesterday. He's still full of ideas and continues to challenge our views. It's a special thing to have a relationship with a mentor who you end up collaborating with — and not just a professional relationship but also a personal relationship, which I cherish. That's the story of *Expectations Investing 2.0*. I hope the world doesn't come apart again with the publication of a new version of the book, but certainly when the first one came out, the timing was not ideal from a marketing point of view.

Madaan: I think the timing was ideal for a lot of investors who were in their formative years. Many of my friends and a lot of people I respect tell me that the book made a huge impact on how they think about things. Of course, Warren Buffett had talked about following the cash, like you said, through this concept of owners' earnings. Could you talk a bit about how cash is different from GAAP accounting? You say in your book that multiples can be used or misused, so help us peel that layer a little deeper with an example or two, if possible.

Mauboussin: The first point to make is that earnings themselves, and earnings growth in particular — which seems to be what drives a lot of executives and to some degree is a lot of the chatter you hear in the financial community — in and of itself is not value-creating. The thing to focus on is what creates value.

Buffett talks about the one-dollar-bill test: if I take a dollar and invest it in this business, will it be worth more than a dollar in the marketplace? That happens only when you're earning above your cost of capital. That's the core of business in general. You take a resource — in this case, money — and you put it to work and then it generates returns in excess of the cost of capital or the opportunity cost of that capital.

That's the first point to make: earnings themselves and earnings growth are not indicative of value. You can have two companies with the same earnings growth rate where one creates enormous amounts of value and the other doesn't. That ties back to return on invested capital, basically. Are they earning appropriate returns on their investment? That's the first point.

The second thing is something we've been spending a lot of time on in the last couple of years, and something I think is an extraordinary source of distortion these days. When I started in this industry, tangible investments — think about physical assets: factories, machines, inventory, and so forth — were about 1.5x to 1.8x intangible investments. Intangible is by definition non-physical: branding, training, even R&D, software code writing, and so forth. That relationship has completely flipped. Our 2021 estimate — the dust hasn't settled, obviously — is that it's about a 2:1 ratio the other way around. Intangibles are vastly larger than tangibles. That's important because intangible investments, for a variety of weird accounting vagary reasons, are expensed, so we're losing the trail these days of this idea of investment and return on investment due to the accounting.

This is almost the opposite situation from the first thing I said, which is that you can have growth that's not value-creating. In this case, you can have companies that not only are not making a lot of money, but perhaps even losing money, that are creating an enormous amount of value.

One way to make this a bit more concrete is to go back to an example, and many of you will know about this: for the first 15 years that Walmart was public — by the way, its stock price performance was 3x the benchmark, so it was a great stock — it had negative free cash flow each of those years. It had positive earnings, but they were investing more than they earned, so they had negative free cash flow.

This is one of the trick questions in business school, right? Is negative free cash flow good or bad? The answer is: it depends. If you're investing in high returns, you want to do as much of that as you possibly can, so negative free cash flow is fantastic. You can apply the same logic to what's going on today. You might have a simple subscription business. Usually, the customer cost is upfront and then you have the cash flow streams that come down the road. If that is an NPV transaction for the company, the faster they grow, the more they're going to absorb these upfront costs even though they're going to have higher cash flows down the road.

That's the basic principle: ultimately, follow the cash. There are other issues, of course. There is a lot of judgment by management. Management has discretion as to how they think about depreciation schedules, amortization periods, warranty, reserves, and all sorts of stuff like that. There's wiggle room that companies can operate within. The point is to look beyond all that.

You mentioned owner earnings. In the book, we argue for a focus on free cash flow, but not what most people on Wall Street talk about when they say free cash flow. It's truly a finance term. Effectively, the levered version of free cash flow is owner earnings. It's the same concept.

There's a clear tie back to Buffett and how he would think about or argue how the business should be valued. Again, simplistic measures. Again, you're getting at both sides. Some people say, "This company doesn't make money, so I'm going to throw it out." That doesn't make any sense. Others say, "This company is growing rapidly and it's fantastic." That also doesn't make sense. We need another layer of scrutiny to understand what's going on.

Madaan: If I could summarize this — and correct me if I'm wrong — the key takeaway is that it all starts with returns on capital. If returns on invested capital are below your cost of capital, then growth actually takes away value rather than adds value. You want to first understand what the returns on capital are. In the book, you do a great job of using the Domino's Pizza example to help people move

from one number to another to actually concretely measure this. (I'd like to recommend to everybody on the call and those who will listen later to go through the website and the online tutorials, and by the way, I was making mistakes as I went along and I emailed Michael and he helped correct me, so thank you for that!) Can you talk a little about that?

Mauboussin: It was good you emailed me, because you're a really smart guy, and every time you sent me an email, I'd start to sweat and panic, and thought I'd better make sure! What you were pointing out were very logical things. Because it was a franchise business, it was slightly confusing.

You're making an important point. Al and I wanted to make sure we made these ideas accessible. If you're a novice investor and you've never done any investing at all, some of these ideas could feel a bit overwhelming, even if you slowly go through the book. If you've been around, and you're somewhat conversational in accounting — you're comfortable with numbers and so forth — you're going to find it fruitful.

I have found in this most recent wave of talking to professional investors, many of whom are former students, this has been the richest set of conversations I've had in a long time. They found a lot that they found provocative..

Because we wanted to make this accessible, we built a website called expectationsinvesting.com, and in addition to the typical propaganda on the authors and promotions and all that, we included a module called Online Tutorials where we offer ten tutorials, each of which discusses the principles, and in most cases, there's a downloadable Excel spreadsheet.

You mentioned Domino's Pizza. It's tutorial eight: how do you do a price-implied expectations (PIE) analysis? You can go to the book and see how we did it — we share the numbers and the assumptions and so forth — but you can go to the online tutorial and download an Excel spreadsheet which will have the same numbers as what's in the book. I'd found when I was learning from Rappaport's book, I didn't really understand all the details of how the calculations worked, so I created spreadsheets to replicate what he was doing. It may be good to do it on your own, but we've done that spreadsheet as an additional resource so you can see exactly how we came up with all these calculations. It also provides you with a free template if you want to do the exercise with other companies. You can do that as well. It's a framework that should be fairly robust.

Thank you for pointing that out, Saurabh. It's important that we try to give people resources to help them use these ideas, to make sure it's as accessible as possible.

Madaan: Thank you for sharing that work with us. As I was reading the book, I found it helpful to do the tutorials one at a time, as I was going through each chapter. Could you talk about the price-implied expectations approach, which is the heart of this book? How does that differ from or complement the discounted cash flow?

Mauboussin: Of course I would love everybody to buy the book, but I'll give you the essence of the book in about 30 seconds, and then we can break it down into different pieces. There are three steps to the process.

The first step, as you just pointed out, is understanding price-implied expectations. Second is introducing strategic and financial analysis to determine or judge whether those expectations are too high, too low, or about right (which is the truthful answer in most cases, which means you put it into the "move it on and move on" category). Third are the results, which is "Do I buy or sell? Or do I do nothing?"

Let's start with the first step. The first argument we made is actually a follow-through for our

discussion on earnings. We argued that the appropriate way to value a business is the present value of future cash flows. I don't think anybody — certainly in theory — disagrees with that. The question is how do we make that a practical set of concepts? There's a lot of the devil in the details in terms of things like continuing value and so forth, but we argue that on balance, if you do these things intelligently, you can get a lot of insight.

I was trying to study the psychological phenomenon behind the fact that everybody seems to want to place a value on a company, and then compare the value to the price. They feel like it's worth 12 times EBITDA, for example, or 25 times earnings. They feel like they have to value it. It's almost like a volition.

As you gathered from *Expectations Investing*, we're taking a different tack which is to say, "The only thing we know for certain in this world is the stock price," so let's reverse engineer. Essentially, what we're doing in the price-implied expectations exercise is saying, "Using a discounted cash flow model, what do I have to believe about the value drivers?" Those are predominantly sales, margins, and capital intensity. "What do I have to believe for this stock price to make sense?" If you're doing price-implied expectations correctly, you should have no judgment. You simply say, "What do I have to believe?" You're looking at XYZ Company. What is priced in? What do you have to believe?

The second step is where you're rolling up your sleeves. You're examining history — the company's performance, and maybe the industry history. You're doing strategic and competitive strategy analysis to say, "Given what we know about how the business works and how it's going to unfold and its opportunity set, does this set of expectations seem too high, too low, or appropriate?"

It's important that when you leave that step, you should have scenarios — upside, downside — and it shouldn't be just bull-bear case. It should be more than that. You should have scenarios and associated probabilities, and we can talk about how to do that.

Now you're thinking more in terms of expected value. To me, the notion of value is expected value, and margin of safety — which is one of the core ideas from Graham and something we continue to teach at Columbia Business School — would be that the price is substantially below the expected value. There are ways I can lose, but there are many, many more ways that I can win, so I built that in. Then, you make your buy/sell decisions. For the buy/sell decisions, we introduce things like sensitivity to taxes and friction costs and so forth.

That's the basic idea of how to do this. The key — in step one in particular — is to use the best of the DCF model without necessarily forcing your own assumptions on it.

The last thing I'll mention is a couple of ideas in the book that I found to be so important but that are not used as well as they should be — and by the way, when you explain expectations investing to investors, everybody nods and goes, "Yeah, I get that," and everybody thinks that they're doing it, but in reality, it's remarkable how few people actually do it this way. It's quite scarce in terms of people's approaches.

The first is chapter three, about this concept called the expectations infrastructure. There's a long story behind how we came up with this but, basically, this is how you do sensitivity analysis. The key is what we call value triggers, which are sales, costs, and investments. Every business everywhere in the world has these three things, but those are too blunt to map onto the ultimate value drivers which drive the DCF model, so we refined them through what we call the value factors. These are six microeconomic shapers — the ultimate value drivers. This allows you to understand sensitivities. It's key issues, such as operating leverage. Operating leverage is about absorbing pre-production costs. I build a factory for 100 widgets and I'm now making 50. As I go from 50 to 100, I'm absorbing pre-

production costs and that improves my profitability. Or economies of scale: as I get bigger, I can do things cheaper.

We want to be overt as we think about different scenarios, for example, sales growth — how those flow through the value factors and what that means for ultimate value. This is a way to have a much richer thought process and a much richer dialogue, how to capture these key issues, how delta EBIT and delta sales relate to one another. That's the first big idea.

The second big idea is this idea of base rates. This goes into the decision-making literature to a great degree, but the argument here is that instead of looking at every company uniquely (as if you're the only person ever having done the work before), rather say, "Let's think about this company as an instance of a reference class. Can we select an appropriate reference class and understand how things have unfolded for that reference class? Does that inform how we should think about the prospects for this particular company?"

When you explain the idea, everybody gets it, but most investors and most analysts operate as if they're unique in some way and their analysis is everything, versus understanding the sweep of corporate performance which can be informative for understanding prospects.

Those are two big ideas. If nothing else, people should look at expectations infrastructure, and then secondly, integrating base rates is valuable and vastly underutilized as a tool for investing.

Madaan: Let's go through an example here. I worked in a tech company before. In learning about investing on my own, what I have found is that sometimes you encounter these two extremes of viewpoints. On the one side is the idea that valuation is the lowest earnings multiple. The other extreme — and I'm not necessarily saying these are right or wrong — is that growth is all that matters. If you're buying a good-quality business and it's growing, the multiples will take care of themselves.

What your work brought home for me was that we should be — and let me quote Ted Lasso here — curious, not judgmental. That element of approaching this with curiosity rather than a preconceived judgment or opinion was helpful. You said that as intangibles have grown, we can not necessarily depend on GAAP accounting to do our valuation work for us. As Mr. Buffett said, don't just look at earnings. Look at owner's earnings by taking account of investments on the cash flow statement. You said that even on the income statement, what you see as an operating expense could actually be a capital expenditure. In one of your talks, you used Microsoft as an example. I'm sure this is a company that will be familiar to many in our audience. I was wondering if you could take that as an example and make this a little more concrete for everybody here.

Mauboussin: Certainly and thank you for that introduction to the idea. We wrote a piece in the fall of 2020 — a little over a year ago — called [One Job](#) where we go through the Microsoft piece. If anybody wants to read the whole piece, just search for "One Job Mauboussin" or something like that, and I'm sure it'll pop up.

The reason we selected Microsoft is precisely for all the reasons you just cited: it's been around for a long time, it's a very profitable company, they've reported in a very consistent fashion for a long period of time, but there's one other little backstory to this. There's a whole academic community working on these issues of intangibles. Carol Corrado is one of the most famous, but there's a guy named Charles Hulton — Chuck Hulton — at the University of Maryland. Hulton wrote a paper specifically about Microsoft.

One of the challenges with this intangible thing is it's very easy to say that this is a big issue in the aggregate, but actually, it's one of these weird things that when you get down to the specifics, it

becomes even more difficult.

I'm taking SG&A and I'm thinking to myself, "How do I separate SG&A into what I need to run the business — to keep the trains running on time and deliver the mail — and what's discretionary, which is an investment. The first big question is what percent of SG&A is in each bucket? The second question — which is secondary — is what is an appropriate asset life or amortization period for those things? Hulton did this in a paper in 2006, so rather than having a big debate about this, we decided to default to the Hulton numbers.

We're going to argue that what matters at the end of the day is free cash flow. You can use the term owner earnings — it's an equivalent concept. To be clear about what free cash flow is, first, you start with NOPAT which is net operating profit after taxes. NOPAT is an incredibly important number to use in finance because it's the unlevered cash earnings of a business. It's a super handy number because it's the numerator of ROIC, which you alluded to before; it's a number from which we subtract investments to come up with free cash flow; it's a number from which you subtract a capital charge to do economic profit. NOPAT is your central number in finance.

From NOPAT, we subtract investments in future growth. Classically stated, investments are: working capital changes — which, in Microsoft's case, by the way, is actually a source of cash because they have a negative cash conversion cycle; capex — which we typically express net of depreciation, so it's capex above and beyond depreciation, so we're assuming that maintenance capex and depreciation are roughly a push (and we can come back to that — by the way, it's something we're working on right now); and then, acquisitions — we need to account for acquisitions as well.

NOPAT minus investments is free cash flow. Free cash flow then becomes, by definition, the pool of cash available for distribution to all the claim holders. Let me make a side note that when companies or many investors talk about free cash flow, what they're talking about is cash flow from operations minus capex which, if you just heard my definition, is actually a different number. I'm using a finance term, but when you hear people talk about it every day or read an analysis report, they may be using a different definition, so let's be clear about that.

With the Hulton guidance, what we're doing is taking some of those expenses and, as you correctly pointed out, we're making them capital investments. Essentially, what you're doing is moving something from the NOPAT line down to the investment line. What happens, of course, is NOPAT goes up, and investment goes up by the exact same amount. Free cash flow doesn't change, but the mix changes quite dramatically.

I'm going to get these numbers wrong, but roughly speaking, the NOPAT numbers for Microsoft go up by I think it's seven or eight billion. It's about a 10 or 15 percent lift. Investment goes up by a higher percentage because obviously they invest a lot less, so the investment goes up by, say, 80 percent, and then free cash flow doesn't change.

Why, then, are we going through all this effort if free cash flow is the same? What's the big deal? The answer is exactly the point that Saurabh correctly made: what we need to understand is how much money we are investing. What's the return on investment? That's going to generate your future NOPAT. If I don't know what my investment magnitude is, if I'm confusing it between my income and my investments, then I really don't have a grasp on the business. That's why we called the piece One Job. We argue that the one job of an investor is to understand the most basic unit of analysis of how the company makes money, and you need to make these adjustments.

Here's the thing. Microsoft is old. It's big. It's super profitable. It's a spectacular business, just to be clear. Another thing I should mention is that when you do capitalize the intangibles, you place them on

the balance sheet. That means their balance sheet becomes much bigger. Their ROIC goes from something in the high 50s — which is spectacular, obviously — to something in the high 30s — which is still in the realm of spectacular, but not quite as much. That's a step toward reality. You know that 50 seems high, and 30 seems more grounded. There are some other adjustments you can make to get an even more realistic estimate. We wrote a piece earlier this year called [Market-Expected Return on Investment](#) (MEROI). It's very technical, but if you do MEROI, it's actually even lower than that number, which I think is another step toward reality.

Microsoft is a good example, but when I say it's a 10 to 15 percent lift, that's actually fairly muted. When you go into younger companies that are investing an even higher proportion of SG&A, the lift is even bigger. You can imagine you get an extremely different portrayal.

We wrote a piece a few months ago called [Categorizing for Clarity](#) in which we argue that there are at least three — maybe even four — adjustments that you need to make to the standard statement of cash flows in order to understand the business. (By the way, I actually really like the statement of cash flows; it's usually where I start when I look at things, because although I can't get margin structures, I can get net income and I can get working capital — I can get a feel for things pretty quickly.) The way it's presented is wrong. Taking Amazon as an example, when you make these adjustments, Amazon's earnings, by our reckoning, would almost double from what they reported. Instead of earning \$20 billion, they earned roughly \$40 billion. That means, all things being equal, the multiple is half of what people claim it is. Even with the EBITDA numbers, if you make the adjustments we suggest, the multiple essentially gets cut in half.

You get a very different portrayal of the economics of the business by making these adjustments. I'm not pretending that any of our assumptions are perfect, but I do think they're all steps toward reality. This is incredibly exciting as an investor because what we have is this massive misspecification in our accounting. What we have is a lot of people who are using rules of thumb and are lazy. If we as a community can do a slightly better job of understanding the core economics of the business and being able to recast the financial statements to get a better and clearer view of what's going on, that's exciting. That's what I tell my students. Sure, investing is hard and it's a grind, but I'm telling them that this is a cool, exciting time, because if you are just a little ahead of everybody else and have better insights than everybody else, it should be productive. That's a long-winded answer to your excellent question.

Madaan: That was very helpful and hopefully sets the context for my next question. You said that despite the fact that your approach makes so much sense, and despite everybody nodding their heads and saying it makes sense, very few people actually do the work and use this approach. Why is that?

Mauboussin: I don't know. It's a good question. In my first day of class at Columbia Business School, I assign some stuff from security analysis — nothing too detailed, but the high-level concepts of the importance of margin of safety and Mr. Market metaphors and so forth — but the other thing I assign is a 13-page chapter from a book about betting on horseracing. The chapter is called *Crist on Value*. It's written by Steven Crist who is a horse handicapper by training. Crist is an entertaining, colorful guy. He grew up in New York, he's a great piano player. He went to Harvard and studied English literature or something like that. One day, his friends dragged him out to the dog racetrack, and he was enamored with all the numbers. After graduating from Harvard, he ended up getting a job at the New York Times as the horseracing correspondent.

He wrote this 13-page summary, *Crist on Value*, about how to think about handicapping, broadly speaking. I recommend that everybody reads it because it's one of the best pieces you'll read about investing. You can go through the document and replace the word "horse" with the word "stock" and it completely applies to what we do every day.

He's got this one line where he's basically saying it's all about expectations. He says something like, "Most people think that they're doing this, but very few actually do." I don't know why that is. That's why I said before, I'd love to find out the psychology behind it. You're more in control if you say, "I've calculated value and then I'm going to compare that to the price," than if you say, "The price is this thing." I'm reacting versus being proactive.

Crist's point on handicapping is you don't make money by figuring out which horse is going to win the race. You make money by figuring out which horse has mispriced odds. Likewise, in investing, we know that growth investing has struggled at certain times. Why? Because expectations are running too high. These could be fantastic businesses, wonderful value-creating businesses, but all those beautiful things are priced in and then some. Consequently, they may not be great stocks. It's the old thing — great companies are not always great stocks. This is exactly the point of all that.

I don't know psychologically why we don't do more of this or don't feel comfortable with it. It completely resonated with me from the beginning. The questions, "What do I have to believe for me to invest?" or "What do I have to believe for the stock to make sense?" are sensible questions.

I want to add one other thing because I thought this is where you were going to go with it — we have a chapter dedicated to this (I think it's chapter eight). We argue that if it's hard for you to come up with a value based on what you can touch and feel in the business today, you don't want to completely dismiss the stock, because there could be the potential for real options. I don't want to get too carried away with this because people should be measured in how they think about this, but it's also important to not dismiss it completely. What do I mean by a "real option"? We're all familiar with the concept of a financial option, which is the right but not the obligation to do something: typically, a call option is to buy a stock at a certain price within a certain period of time, and a put option would be to sell a stock at a certain price. A real option would be the corporate equivalent of that, which is the right but not the obligation to make an investment in a business. These real options can be potentially valuable.

The classic example is an extraction industry. You have an oil well that is productive. It's NPV-positive or value-creating if oil is \$60 a barrel or higher. Oil today happens to be \$40 a barrel, so it's NPV-negative to drill, but is that valueless? No. It's not valueless because there's some probability that oil will go over \$60. We measure that usually with volatility. Consequently, there's some option value to that — the right but not the obligation to do something if the conditions are met.

I like to say that certain companies have real options. That's usually associated with great management teams that understand how to nurture and ultimately exercise options appropriately. Typically it's early industries — it has to be a volatile industry. There has to be a lot a lot of change going on.

Madaan: In the book, you use Shopify as an example.

Mauboussin: In the first version of the book, we used Amazon. You talked about luck before, and it was mostly luck we used Amazon. AWS was not a twinkle in Jeff Bezos' eye back in 2001, and that ends up being a big part of their story. That worked out. We use shop Shopify in this second edition of the book.

I think Tobi, Shopify's CEO, gets this. It's a fast-changing and burgeoning industry, where market leaders tend to be better than others.

You mentioned 2001 being an interesting time. It certainly was an interesting time in one way, which was that it was a great time to invest, because you were getting things toward the bottom. The flip side is, if you're a company and you have an option, you need access to capital. You need to be able to spend money to exercise an option. If there's no access to capital — if capital markets are shut down

because of bad equity markets, or credit markets are spooked or whatever it is — that becomes difficult.

We have a checklist of where you might want to think about this. Shopify is a good example where I would not dismiss the idea based on what I can touch or feel immediately. The key is, as value investors, we want long options but we don't want to pay too much for them. That's the idea. I want to acknowledge them, but I don't want to pay too much for them at the same time.

Madaan: You said this book is not written just for investors, but it's also for operators and business leaders. Within this framework, who are some business leaders that you have found are willing to invest with a longer-term framework that is grounded in rationality?

Mauboussin: It's hard to beat Will Thorndike's book *The Outsiders*. It's a bit old now, and we might think about the folks we would add to our all-star Hall of Fame in terms of capital allocators. That's the issue — capital allocation.

When you talk to CEOs and CFOs, but CEOs in particular, these are well-intentioned people. They're hardworking, they love their companies, they want to succeed, but they don't have a north star for capital allocation. The skills that got them in that seat are not the skills that they need to deploy every single day.

To me, it's about capital allocation. If we were to add to that list, we would add the Rales brothers and Bezos. We'd add the obvious people that history has now demonstrated were able to distinguish themselves from others, but when I talk to a management team, the key thing I want to know is do they have a north star? Do they have a nose for value creation and understanding capital allocation in general? Capital allocation is so pivotal, both as an investor and as an executive. It's stunning how few of these executives are great at it. It's what Buffett talked about. The skills that get you into the seat are not the skills that you need to deploy every day. That becomes a big problem.

A lot of those executives in Thorndike's book were quiet insiders. They came up through the organization. They had weird backgrounds and they thrived. The reason I particularly like that book is that one of the chapters is about Bill Stirtz. I was a food analyst back in the day. I covered Ralston Purina, so Bill Stirtz was one of the guys that I dealt with.

I'll tell you one quick story — I don't know if this is out there. I was a junior analyst, a low guy in the organization. My senior analyst says to me, "Nine to five, you're my guy, but if you want to work on the weekends or at night, you can do whatever you want, and if you do some decent research, we'll publish it together. My name will be on the top, your name on the bottom." I did a report on Ralston Purina. It was pure Rappaport. It was, "Here are the businesses, here are the value drivers, cost of capital, expectations" — the whole shooting match. My senior analyst reads it. He flicks it back at me and goes, "This will be of some mild academic interest, but no one in the real world would ever care about it."

We published the report, and a week or two later, we get a call from Stirtz's office saying, "Bill Stirtz read your report and really liked it and would like to invite you to St. Louis to talk to the senior management team about how you think about valuing businesses." Besides Rappaport obviously being extraordinary, this was one of those "attaboy!" moments. It was incredible to have Bill Stirtz ask us to come out and talk to them, because he was a low-key guy. He didn't talk much to the street. Stirtz was considered the Warren Buffett of the industry. He was very early in buying back stock, for instance. Everybody thinks about it now as commonplace, but in the 1980s it was considered a bit wacky to buy back your stock.

I visited the company one time and they gave me a stack of old research reports, right from the time that Stirtz became CEO — '81, '82, '83. There are analyst reports that say if they buy back stock, it's going to erode book value and they're going to have negative net worth, and then their credit quality is going to go to hell. It's interesting how people approached it back then. They were not at all focused on the cash flows. They were focused on all of these accounting metrics which completely led them down the wrong trail, which is fascinating.

That's another long-winded answer to your great question, but it boils down to value creation. You're exactly right. Just like an investor, you want to take a long-term view of value creation.

By the way, the key is not long term per se. The key is to make money. Sometimes things pop up and they're short term, and you take advantage of them to make money. The other thing to remember is that long term is an aggregation of short terms. They're compatible. It doesn't have to be one or the other. You need to deliver short-term results to get good longer-term returns. They go together.

Madaan: I like to think that you've got to make it through the short term to get to the long term. Thanks for these anecdotes, Michael. They are inspiring for many of us and we appreciate you sharing them.

You've worked with Bill Miller in the past, and you now work with Dennis Lynch. Could you compare and contrast their investment styles — maybe how each of them has employed expectations investing in their own way, if you've seen it? Anything in the spirit of what's interesting and inspiring.

Mauboussin: They're both wonderful colleagues. They're great. I've known Bill for probably close to 30 years and worked with him for nine of those 30 years. By the way, they are friends, too. One of the common characteristics is that both are extraordinarily open-minded. They are readers. They are thinkers. They are intellectually restless. It's cognitively taxing to be constantly reading and thinking and examining your own views. Both those guys do that well.

Bill grew up with a traditional, very Graham & Dodd value orientation. He founded Value Trust with Ernie Kiehne in 1982. Many people don't know that for the first five or six years of Value Trust, it was the number one fund in America. It did better than Magellan. It was extraordinary. They were buying things at 0.3x book and selling at 0.8x book. It was very Graham & Dodd-ish. The fund then went through a difficult spell. That's when Bill, I think, was introduced to the ROIC world. I think Dennis, also at Columbia Business School in the late 1990s and early 2000s, was introduced the ROIC kind of mindset, and I think that had a big imprint on both of those guys as well — understanding good businesses.

Dennis also started off in industries that were more traditional. I don't like this term "growth versus value" because I think it's a poor characterization, but both of them have been comfortable operating in spheres — we'll call it "technology," broadly speaking — where there's a lot of uncertainty, but if you see certain patterns or certain strategic positioning, it could confer great advantage. Bill in the 1990s made a ton of money on AOL and Dell. Amazingly, he got out of almost all the technology stuff in 2000. It was stunning how astute he was at that. That's the other thing I think they have in common.

Since I'm working with Dennis today, I can tell you that in addition to all that intellectual stuff, which is important, he's a great leader. He sets the tone organizationally and thinks about every person in the organization — how they can add value. What can they do that they're passionate about? What do they bring to the table that's unique? He encourages them to do that in a way that serves the organization. That's a special sensation. It's a pretty flat organization. There's not a lot of ego. There's an enormous amount of sharing. The tone is set from the top. That was true for both these

organizations.

At their core, they're both learning organizations, which is super fun. If you're a student of investing, if you're a student of the world, if you're curious, these are great organizations — LMCM back in the day and Counterpoint Global. They were great organizations to be embedded in. Every day is fun because you're growing, you're learning, you're being challenged, you're finding out you're wrong.

Madaan: My final question: whether in the investing world or beyond, could you talk about some ideas or people who have made a big impact on you or been key inspirations for you?

Mauboussin: I've always been a big Buffett fan, of course, but I've taken more from Munger than I have from Buffett. Obviously, there's the idea of the mental models approach. I don't know if Munger himself is still advocating for it as enthusiastically as he did 25 or 30 years ago, but that framework for me has been incredibly important.

Related to that is the Santa Fe Institute where I've been involved for many years. I first went out there 25 years ago. I served on the board for 20 years and was Chairman of the Board for eight and a half years. It's an institute that is dedicated to basic research. You're a scientist at heart, too, Saurabh. The key is that it's across disciplines. Most of the most interesting problems in the world — and it's true for investing, too — are at the intersections of disciplines. We need to break down these disciplinary barriers. SFI has been great.

The other one I'll mention is EO Wilson. There's a beautiful new biography of EO Wilson by Richard Rhodes called *The Scientist*. EO Wilson is most famous for his work on ants. He was considered the world's leading ant expert, but he wrote a book in 1998 or '99 called *Consilience*. You mentioned in your intro that my title is Head of Consilient Research, and I'm sure people were wondering, "What is he talking about?" Consilient is, of course, derived from consilience, which is this idea of unification of knowledge.

What Wilson argued — and, of course, I'm sympathetic to his argument — is that we've made enormous strides with reductionism. Scientifically, we break things down into components and understand the pieces. That's fantastic. It's gotten us far, but he's saying the next wave of what we need to do is to work across disciplines. Most of the vexing interesting issues stand at the intersection of disciplines, hence we need consilience. We need this idea of bringing ideas together in order for us to proceed.

Robert Hagstrom wrote the great book *Investing: The Last Liberal Art*. Investing is one of the ultimate consilient industries. This is why it's such a pain yet such a joy every day, because you've never got this game licked, but at the same time, it's an exhilarating journey to learn and to evolve, and to be proven wrong sometimes and to be proven right at other times.

Madaan: Thank you so much. Let me hand it over to John to see if we have any audience questions.

Mihaljevic: We're bulging with questions over here, so let's see how many we can fit in. Christopher Singh, an investor I admire in New York, writes: What's your starting point to normalizing some of the upfront costs that subscription businesses have and getting to an understanding of steady-state economics?

Mauboussin: It's a great question and a tricky one. We wrote [a big piece about this](#) earlier this year, about the economics of customer lifetime businesses or customer subscription businesses. Christopher's question is exactly right. You need to think about where you are in the lifecycle — they're probably S-curves. That requires an assessment of the total addressable market — a measure of where you are with penetration and what your competition is likely to do. Those things are tricky

things to sort out.

There is stuff floating around. I actually had this conversation with Trent Griffin who I'm sure you guys all know. Trent was asking me, "What are the normalized metrics that the CEO of a subscription business should be thinking about?" It depends a little on the nature of the business — if it's pure software versus some other kind of service. That piece we wrote is the best I can say on this. What happens is your customer acquisition costs change through the lifecycle, and retention numbers change through the lifecycle. There are dynamics that are moving around. Figuring out steady state can be tricky for new industries. This is where base rates might be helpful — thinking about what we've seen in the past and how things have unfolded. I would refer back to that report. We spent a lot of time on that report and it's got a lot of good stuff in it. I've got nothing to add to what's in there. It's a great question, by the way.

Mihaljevic: Here's a little invitation to speculate, but I think it's worthwhile speculation. Why do you think companies are so guarded about disclosing the split between discretionary (i.e. growth) SG&A and nondiscretionary or maintenance SG&A when it can often have a significant and favorable effect on valuation?

Mauboussin: I don't think they know the answer. There's a paper from 2018 in Management Science that got me excited, which tackles this issue. It was written by Luminita Enache and Anup Srivastava — they're both now at University of Calgary — and was called [Should Intangible Investments Be Reported Separately or Commingled with Operating Expenses?](#)

I'll give you one example on this. A friend of mine is the former chief marketing officer for Coca-Cola. He was in charge of a multibillion-dollar budget. I was working on this maintenance versus discretionary thing, so I called him up and said, "You had this gargantuan budget. Obviously, you need to spend some money to be competitive with Pepsi and other beverage companies around the world. How did you think about maintenance versus discretionary investment?" He says, "That's not how we thought about it. We get a budget from the board. I basically broke it down by region and then I let the regional managers do whatever they wanted." They don't think about it that way, I think, to a large degree.

I mentioned at the outset that this is an exciting time because we don't know the answers to a lot of these questions. I mentioned that recent paper from 2018. Even in the last few months, there's a nice [new paper](#) by Iqbal and Srivastava and Rajgopal from Columbia and at least one other author, where they are starting to do some specifics by industry of breaking down what percent of SG&A should be treated as discretionary investment versus maintenance. They did some interesting work on amortization periods of the useful life of the assets. This is like Fast and Furious. The research is happening as we speak which is exciting. It's important and useful to stay on top of it.

In the report [Categorizing for Clarity](#), where we talk about Amazon, we used the Iqbal-Srivastava numbers as applied to Amazon. They're using Fama-French industry classifications to try to get a handle on that. It's imprecise, but as I mentioned before, I think it's a step toward reality. That's the main thing we want to do — get closer to understanding the underlying economics.

Mihaljevic: I'm indulging my own question here (sorry to everyone in the queue): Can you bring base rates into this a bit? In other words, I'm curious when you see a company trading at more than 50x sales, what are you thinking in the context of base rates?

Mauboussin: Thank you for the question. Just so we're super clear, base rates mean that we're going to think about our problem not as unique but rather as an instance of a reference class. The first challenge is to find an appropriate reference class. Many times, we use simple things, such as looking

at companies that have revenues of a particular size. Let's say the company has two billion in revenues. We're going to look at every company historically at the point that they had two billion in revenues — we can adjust for inflation and so forth — and we can look at the three-year, five-year, or ten-year distribution of sales growth rates. That gives me this distribution from really fast growing to very slow growing. That is going to allow you to understand. If I were naïve, I would have some sense of what that number looks like.

An example we use in our discussions on base rates is Peloton. In September 2020, an analyst forecasted — and I don't mean to pick on this specific analyst because I think this was the consensus at the time — that Peloton would grow something like 30 percent for a decade. They are at \$1.8 billion in revenue, I think. The question to ask is, "How many companies with \$1.8 billion in revenue have ever grown 30 percent a year for ten years?" The answer is that it does happen — about one or two percent manage it — but if it's a two-percent probability, do you make that your base case? Probably not. You would be much more moderate. You might say, "I'm really bullish. I think it's a 20-percent scenario."

Remember that intangible assets have different characteristics from tangible assets. Some of those characteristics are bullish, and some are bearish. They're different. An example of a bullish one is scalability, but another that's not as bullish is obsolescence.

We re-ran the base rates, and we discovered that those industries that are most intangible-intensive have faster growth rates on average, but they also have big standard deviations. In other words, there are some companies that grow much faster than what we've seen historically, and some that decline much faster than what we've seen historically.

To me, base rates are not like tablets handed down from on high — that this is the word. They are living, breathing, dynamic things. As we have more intangibles in our society, those distributions are going to shift their form to some degree. One way to deal with that is not to throw away any of the historical data, but rather to weight it. You would weight the more recent past more than the distant past, and that gives you a bit of a better way to think about distribution.

Thank you for that question. It's an incredibly important thing. It's another tool that's vastly underutilized. Again, when you explain it to people, everybody gets it, but almost nobody does it.

The last thing I'll say — and Kahneman and Tversky wrote this in 1973 — is that the key is to blend your own analysis with the base rate. It's not one or the other. It's a combination of the two, and there are some mathematical ways to do that. I'm not saying you should throw away your analysis and only rely on the base rate. I'm saying you need to meld them in an intelligent fashion to give you the best sense of whether 50x sales, for example, makes sense or not.

Mihaljevic: Here's a slightly technical question from the audience: How reliable or unreliable is using change in net operating assets as an estimate for reinvestment in the business?

Mauboussin: I would have to see how that's defined. Net operating assets to me would be equivalent to the invested capital calculation. It is delta invested capital. As I broke it down before, NOPAT minus investment, in theory, investment equals delta invested capital from one period to the next. It gets messier in real life because of other stuff, but in theory, that's how it's supposed to work.

I don't think it's horrible. There are limitations to this as well, but one of the things we talked about is ROIIC — return on incremental invested capital. The classic way we would look at that is — and it might be that same definition as, or a slightly modified definition of, the denominator — how much money have I invested, for which you can look at delta net assets or you can look at delta invested

capital. Then, we look at delta profits, delta NOPAT in the numerator. We tend to lag these and do multiyear just to take out noise (as an analyst, I should do a three-year and five-year rolling). When you start to do that, you get a sense of, on the margin, are incremental returns going up or are incremental returns going down? That can be fairly helpful.

Some industries are smooth — retailers, for example, where they're adding stores all time. Others are lumpy, where they're making periodic big investments. It gets a little tricky from one industry to the next but, if I understand the question correctly, that's not a bad way to go.

Mihaljevic: One last question here (my apologies to everyone whose questions we didn't get to): What discount rate for equities do you use in today's interest rate environment? Should the ten-year yield still be the risk-free rate upon which we compare?

Mauboussin: This is a great question. I have a lot of friends who are Federal Reserve and central bank complainers, so they're always complaining about all this stuff. I always say to them, "You can complain about the Federal Reserve and central banks around the world on your own time. It can be your hobby, but when you're at work, your job is to make money. Your job is to be embedded in reality. All this other stuff, you can do on your own time, but let's focus on what's real."

The ten-year treasury note trades every day. It's a gargantuan thing. Wherever we are — 140 or 150 — on the ten-year, that's reality. That's the world we live off of. By the way, almost everything is pegged off of that, including credit spreads and so on and so forth.

I really like the work by Aswath Damodaran. Every month, he publishes an equity risk premium on his website to which you add that risk-free rate. That gives you an expected equity return. I think the most recent reading was 6.3% — which is nominal, by the way. If you go to the ten-year breakevens, I think inflation expectations are still around 2.5%. You're talking about 3.5% or 4% real, which doesn't seem horrible to me.

You may wonder, though, how good this Damodaran thing is. We looked at this just the other day. We went back to 1961 where his data starts, so we have 60 years of data now. We plotted on the X-axis Aswath's ten-year forecast — market risk premium plus risk-free, so market return expected — and then the actual total return on the S&P 500. It comes out to about a 0.7 correlation, so it's not perfect, but it's pretty good.

In contrast, you hear some of the Buffett acolytes (which include many of my good friends) say, "I use ten percent for everything," which is a much less robust way to think about future excess returns.

Firstly, be embedded in reality. By the way, in the new McKinsey valuation book which came out a year and a half ago, they said we should create a synthetic risk-free rate. What is that? They're talking to corporates, but that makes no sense to me.

Secondly, in your cost of capital, there are a lot of market-based touchstones. We have credit spreads. Bonds trade all the time. The volumes for US corporates are 10 to 15 trillion dollars. Unless you say it's all wrong, that's a touchstone. You have things like implied volatility, you have credit default swaps. There are market-based touchstones that should guide you in understanding what the return on equity should be. You shouldn't have to make it up. There are some ways to get yourself in the neighborhood that are pretty sensible that you should avail yourself of.

This analysis says that across the board — notwithstanding another very good year for equities in 2021 — expected returns should be quite muted. People should acknowledge that, certainly, in the States. There may be a lot of dispersion, so you can still make good excess returns, but if you just buy the benchmark, it's going to be tricky. The current numbers suggest a fairly muted return expectation.

Historically, we've been 6% to 7% real. At the moment, we're probably more like 3.5% to 4% percent real, so not quite half, but maybe two-thirds of the historical returns is what a reasonable expectation should be at this point.

Mihaljevic: We'll wrap it up there. This has been terrific, and I particularly enjoyed that anecdote about Ralston Purina and getting invited by Bill Stiritz. What a wonderful lesson in creating serendipity by going the extra mile and delivering value to others. We should all frame that and put it on the wall to remind ourselves of it every day, because that is such a great lesson — not just for business and investing, but life in general. Thank you so much, Michael and Saurabh.

About the session host:

Saurabh Madaan serves as Managing Member of Manveen Asset Management, based in Glen Allen, Virginia. Prior to founding Manveen Asset Management, Saurabh was a Managing Director and Deputy Chief Investment Officer at Markel Corporation (NYSE: MKL), where he worked closely with Markel's Co-Chief Executive Officer Tom Gayner. Saurabh also spent more than seven years at Google in various roles, including Senior Data Scientist, Engineering. Saurabh holds an MS degree in Engineering from the University of Pennsylvania.

About the featured guest:

Michael J. Mauboussin is Head of Consilient Research at Counterpoint Global. Prior to joining Counterpoint Global in January 2020, he was Director of Research at BlueMountain Capital Management in New York. Before joining BlueMountain, he was a Managing Director and Head of Global Financial Strategies at Credit Suisse. Before rejoining Credit Suisse, he was Chief Investment Strategist at Legg Mason Capital Management from 2004-2012. Michael joined Credit Suisse in 1992 as a packaged food industry analyst and was named Chief U.S. Investment Strategist in 1999. Michael is the author of three books, including *The Success Equation: Untangling Skill and Luck in Business, Sports, and Investing* and is also co-author, with Alfred Rappaport, of *Expectations Investing: Reading Stock Prices for Better Returns*. Michael has been an adjunct professor of finance at Columbia Business School since 1993 and is on the faculty of the Heilbrunn Center for Graham and Dodd Investing. He earned an A.B. from Georgetown University.