

A conversation with Aswath Damodaran

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Heiko Ziehms: I'm very happy and honoured to be joined today by Professor Aswath Damodaran. Professor Damodaran's accomplishments are impressive and I'll share a small part of them. He is the Kirshner Family Chair in Finance Education and Professor of Finance at NYU Stern School of Business. His contributions to the field of finance have been recognised many times over. Widely regarded as one of the world's foremost authorities on valuation, the “Dean of Valuation”, his research and publications have become essential reference points for both non-contentious and contentious valuations alike.

Professor Damodaran is the author of several highly regarded books on valuation, corporate finance, and investment management. He also writes a widely read blog, Musings on Markets.

I want to briefly preface today's podcast by noting for those involved in disputes that damages valuation is not a distinct discipline governed by its own economic principles. There is not one valuation theory for investment decisions and another for disputes. There is only one body of corporate finance. So damages valuation must engage with the same questions that underpin any sound valuation. And there is no one better to discuss sound valuation with than today's guest.

Professor Damodaran is very clear that he does not serve as an expert witness in disputes. Having said that, his work is referenced constantly by those who do. And I'm not sure if he is fully aware of the extent of his influence in this particular field, but Professor Damodaran's research and data are used and cited with remarkable frequency in expert reports, likely more than those of any other finance academic.

Professor Damodaran has taught valuation at NYU Stern since 1986. This is his 40th year on the job. We want to look at the past, the state of the art, and the future of valuation. Professor Damodaran, welcome to the podcast.

Aswath Damodaran: Thank you for having me.

Heiko Ziehms: You've had a 40 year teaching career and I'd like to start by asking you to reflect on how the field of valuation has changed over the time. In broad terms, how is what you are teaching today different from what you taught 40 years ago? Or if a student took your valuation class in 1986 and then sat in your class today, what might surprise the most?

Aswath Damodaran: I think the biggest change is not in what I teach, but what you have access to practice what I preach. I'll give you an example. I did my first valuation in the

early 1980s and my 1986, this was still the state of the process. I actually wrote to a company to get an annual report, actually physically wrote with a fountain pen. Please sit to the investment relations office saying, can you send me an annual report? And to give the company credit, I got an annual report back in a couple of weeks. And then I sat down to value company. Here's what I had in front of me. I had a ledger sheet, a ledger sheet for those of you who have never seen one, it's just a blank sheet of paper with lines already pre drawn through it. And to my left, I had a calculator. I wasn't the slide rule. I'm not that ancient. But it was a very primitive calculator. There were no present value buttons on it. On my right, I had a pencil and an eraser.

I learned very early on in this process never to use a pen because you have to cross out things and redo them.

I valued my first company with that annual report, a pencil and a paper and a calculator. And I asked people, if you're doing that by hand, how many line items do you think there will be in your valuation? The answer is as few as you can get away with because every single cell has to be hand computed. So when you add a line item, it's not a copy and paste or a macro, it's you filling in the cells. So in the early 80s, valuation was data constrained. We had limited tools and was parsimonious. The three went together.

Take a valuation in 2026. A couple of weeks ago, I valued Mercado Libre, the Latin American online retail company. I have access to Capital IQ, which is a data set of all financial information, all publicly traded companies. I downloaded the financial filings, every single financial filing that Mercado Libre has done in its lifetime and downloaded them all into an Excel spreadsheet in two minutes. And then while I was there, I downloaded the historical data for every single Latin American retail company. Five minutes in, I had more data than I could ever have even thought of in 1981. Immense amounts of data.

I'm not a high tech Excel user. I've never written a macro in my life. But I built an Excel spreadsheet for any valuation, kind of a generic spreadsheet. But it's built up over time. Incrementally, I've added stuff to it. So it's pretty powerful now. I fed the data into the spreadsheet and the spreadsheet basically computed the value. But it was just taking my inputs and converting them. It was taking the mechanics out. If I just pause there, things should be a lot better in valuation now than 45 years ago, right? We have more data. We have more powerful tools. And with tools, there are people who use Python. Maybe they use an AI to kind of get there. Our tools are more powerful. Our data is more extensive. You'd think our valuations would have gotten better over the last 45 years, but they haven't.

Now, I know I'm talking to an audience of people who do valuation for a living, but we've lost our way in valuation. We've lost our way because it's become too easy to add line

items to spreadsheets. We build these immense financial models. We don't value companies anymore. We do financial modeling and we extrapolate from past data.

And we think detail is going to give us more precision.

And I think that what we've missed along the way is that when you value something, you're telling a story. Whether you like it or not, those numbers you're feeding in tell a story. We've lost our capacity to tell that story. And I think we need to rediscover it if we want to rediscover valuation, especially with the threat of AI looming on the horizon. So I think that's the biggest change. My students have more access to data, more powerful tools, but I almost have to stop them from jumping into the tools and starting to value companies too soon because they need a foundation, not just in valuation, but in basic business before you can embark on using these tools.

Heiko Ziehms: Let me pick up on that point of generative AI and how it affects what practitioners do and what your students do. So you have described yourself in the past, I think, as a relatively light user of generative AI. And you've also warned for a good number of years about the danger of valuation becoming a black box. And as you've just suggested, AI has become capable of gathering vast amounts of data, selecting comparable companies, building models, even generating narratives around the valuation. In your thinking, which part of the valuation process do you think can safely be delegated to AI and which parts should remain fundamentally human?

Aswath Damodaran: I'd be quite honest. A machine is always going to be better at mechanical things than any human being can. And I'd be quite honest. When I look at what I see passing for valuation, especially in the context of fair value accounting and in legal valuation, there's no real reason for appraisers to even remain on the job. You might claim you're bringing human elements, but you're bringing bias. That's the only thing you're bringing to the table.

Everything you do is rule driven. Why? Because accountants like rules and the legal system likes rules. The truth is, if we were gauging the threat to appraisers based on what they do, the threat is immense. And it's deserved. It's deserved because we spent 40 years creating rules and making up rules of thumb. That illiquidity discount, the small firm premium, they're all complete fictions. But we keep using them over and over again and getting away with it. Guess what? We've created the circumstances where a machine will be able to do it a lot better than we can. And I think the only thing that will protect accountants and appraisers in the process is the system. What do I mean by that? A judge might say, I need a human being on the dock. I will not accept a clawed bot doing it. You know what? Companies will hire front people for their AI, put them in the box and you will deliver the message I gave you. But unless you create a need that essentially goes beyond the mechanical, why would I need a human being in this

process? What is it that they bring to the table? And I'm not talking about, you know, remember your competition is not chat GPT, the low tech version of AI. It's a clawed bot that has been fed every single appraisal done in history. Every single twist and turn you've taken, every single exposed rationalization you've ever made, it remembers everything. Not only will it find the right twist to put, but it will grant a great looking report using words that you know over time have been effective in convincing legal systems to accept evaluation

Heiko Ziehms: I'd like to turn to how you're thinking about corporate finance theory has evolved over the last 40 years. And I'd like to break it into a few individual constituent parts and put each to you in turn. And I'd like to start with asset pricing models. So the most common approach used today in both contentious and non-contentious valuations is the original one factor CAPM from the early 1960s. So practitioners' starting points in valuation is usually really that expected returns are driven by only one factor, the exposure to market risk. Now some might add risk premiums to that, perhaps arbitrarily as you suggest, but the CAPM is very frequently the starting point. Most valuations that I get to see rely on the original one factor CAPM. It has survived for more than 60 years despite what is a long list of empirical criticisms. Now, one might say that, unlike in engineering, in corporate finance no buildings collapse if valuation practitioners apply financial theory that might be empirically problematic. And I'd like to get your view as with on the resilience of the CAPM and what your thoughts are on why even as empirical problems have mounted, it has become so dominant.

Aswath Damodaran: You know, when people think about valuation, they think discount rates are somehow a big deal. When I value companies, discount rates don't even make my top 10 list of concerns. When I was adding SpaceX, it's the least of my concerns. You know why? Because we know roughly speaking what the cost of equity is for a median firm. You don't need a CAPM, arbitrage pricing model, multi-factor model. How do we know it? If we know how people price stocks and we have a sense of expected cash flows, we can reverse engineer from that what investors are demanding as a cost of equity. Everything else is academic, right? Whether you use two factors, five factors, four factors, one factor, who cares? The median cost of equity in dollar terms for a global company last year was about 8.5%. The 90th percentile was about 12%. The 10th percentile was about 7%. Think of what I've just said. 80% of publicly traded companies out there have costs of equities between 7 and 12%. And think of how much time we waste in valuation, finessing betas and assessing risk premiums and asking what the right risk free rate is, when in fact we'd be better off just spending our time on the numerator, the cash flows, the growth rates, the margins, the things that matter. But you know why we like to talk about discount rates? Because it gives us this false sense of being in control.

Because we can put numbers, we can bring in a model. It's false precision. So the bottom line is the reason the CAPM has survived is it's simple. Why would I need to go through this exercise of estimating five betas and coming up with a cost of equity of 8.83% when I could have used a single beta and come up with 8.63%? This is rounding error in valuation. In the larger scheme of things, this is not what's going to move my valuation. So I would beg people doing valuation to spend less time on discount rates and more time on cash flows because this is an exercise in futurity. Use the CAPM arbitrage pricing model, multifactor model, or whatever model you think is a reasonable proxy to come up with a cost of equity in your company. I will concede you that. Give me the cash flows and I will control the valuation. So focus on the things that matter, not the things that don't.

A fundamental mistake that I see made in discounted cash flow valuations. And that fundamental mistake is you think you're one shot at getting the discount rate. And once you get that discount rate, you're stuck with it through the lifetime of evaluation. Think of what you're doing to a company on your spreadsheet over time. You're making it bigger. And sometimes in the process of making bigger, you make it go to other businesses, whether you like it or not. And think about the mean reversion that happens to companies as they get bigger and they move into other businesses. Through history, you know what happens to companies? They move towards the average. If you're doing discounted cash flow valuation right, your cost of equity right now is 12%. That's a big number. That's going to affect evaluation. But we accept the fact that as your company matures and becomes bigger on your own spreadsheet, its cost of equity won't stay 12%. It's going to move down towards a 9% over time. That's why in a good valuation, discount rates shouldn't matter very much. You can start at 12 or you can start at 7. But over time, you're going to converge on the average. What difference does it make, what your starting point is, in your eventual valuation? I think the reason it ends up having a disproportionate effect is because there's one and done view that people bring to discounted cash flow valuations. Then it matters, but it matters for the wrong reason. It's because you build an internally inconsistent valuation where your cash flows make your company a larger, more mature company. But your discount rate leaves the company where it is frozen today. Startups are always going to be undervalued in that word. Because you're making the startup into a mature company, but you're giving it the discount rate of a startup company. So I think we need to rethink what we're doing. Discarded cash flow valuations are incredibly adaptable.

But the problem is, we make them inflexible. We put rules into discounted cash flow valuations that in my view make no sense at all. And we make this incredibly adaptable model into an incredibly rigid model. In fact, while we're talking of rigidity, the biggest number in almost any discounted cash flow valuation for a company is that terminal value number.

And it's almost been made into a parody of itself. Here's what you would see as terminal value. You get to your 5 or your 10.

You will assume a constant growth rate forever. And then you use this perpetual growth model to get a terminal value. It's actually not a finance model. It's actually the sum of a series, an arithmetic series, what numerator and denominator both are. So the g is constant, the r is constant. The sum of that mathematical progression is what we've stolen and uses a terminal value. Every single valuation you get to your 10. And I blame people like myself who have written textbooks and the terminal value chapter puts this equation hard. And everybody plugs at it.

Step back. Think about companies across time. How many companies have lasted forever? The answer is we will never know because forever is not here. But even if you put a 200 year or a 100 year, there are very few companies that make it to a 100 years. And if you take tech companies, you're often talking about 20 to 30 year time horizons. In fact, I think that's the biggest difference, the 21st century companies opposed to the 20th century companies. You get to your 10 of your cash flows. You're not looking at forever. You're looking at an extra 15 or 20 years. You know what? You can compute terminal value, which is the 15 year growing annuity. We never use it because we've forgotten that that even exists.

We are so caught up in how things get done in a typical valuation that we forget the idiosyncratic components that come with looking at a business. You asked me about generative AI and how much of a threat it is. If every one of your valuations, your terminal values are minus G , where G is set to 4% and R is set to 9%, hey, you know what? ChatGPT can value your company just as well as you can. If you're the kind of appraiser who can differentiate across long lived and short lived companies, companies that will go on beyond your 10 or liquidate in your 10, you're bringing something to the table that's more difficult, not impossible. For a machine to do. Add nuance to it. And that nuance comes from understanding the business your company is in, not understanding the mechanics of DCF.

Heiko Ziehms: I'd like to next ask about your thinking about market efficiency. And assuming our listeners are familiar with the idea behind market efficiency in its different forms, have your views on market efficiency changed over the past 40 years? And if so, how?

Aswath Damodaran: No, I probably respect markets more now for what they do than 40 years ago. I mean, I am amazed at the ability of tens of thousands of millions of people to get together in a marketplace and assess a value to a company like SpaceX. There's a demand in supply. That's magic almost that this consensus view emerges as an output.

I think that, you know, finance as it was born in the 60s was born with the view that markets are almost always right.

And you know what? That's probably still true, perhaps more so now than 60 years ago. Markets are. And if you work in legal settings, you better accept this. Your job often is not value in companies. People call themselves appraisers and ask them, what do you do? And say, I value companies. Stop lying. You're not value companies. You're pricing them. The court wants to know what you will get in an arm's length transaction as a price for this company. That's a very different mission than valuing the company. It's a pricing mission. And that requires understanding how markets work and respecting how markets work. Appraisers who hold markets in contempt, what's their praises for very long. We get much of the information we use in pricing and valuation comes from markets. So people say markets are inefficient. I don't trust them and then continue to use the inputs for markets. I'm torn about whether I can trust these people because they're being internally inconsistent about what they say about markets.

Heiko Ziehms: An area that's closely linked to market efficiency is behavioural finance. And as I understand it, over the past 40 years, it has become firmly established in economics departments of universities and in business schools. Has behavioural economics or behavioural finance changed anything you do when you value a company?

Aswath Damodaran: Here's where I think people mess up value and price. Value comes from cash flows, growth and risk. Behavioral economics doesn't enter that process. Price is determined by demand and supply. Behavioural economics can be a big component, mood, momentum, all those things. You know what behavioural economics allows us to do? Explain why pricing can give you a different number from value. This goes back to what I said earlier. Your job as an appraiser is not to value a company, it's to price them.

And you know what? A discounted cash flow valuation might not be the right tool if your job is pricing. If I ask you to price an AI company today, you shouldn't be looking at discounted cash flow valuation. That's valuing the company. You're looking at demand and supply and mood and momentum. That is what your job is. So behavioral finance is actually a neat device for explaining why the pricing process and the value process can yield numbers that are not just different, but can stay different for extended periods. It kind of resolves the kind of frustration that some investors feel, which is, I got value right. How come I'm not getting rewarded with a high return? The answer is the pricing process is not in your control and you can get value right and go bankrupt being right if the pricing process never comes around to your point of view. The sooner we separate price from value and start thinking about them separately, differently, the healthier this

discussion will become. And behavioural finance gives us some context into why price can be different from value for extended periods.

Heiko Ziehms: And if I follow up on that, I looked up, Aswath, that in 2011 you wrote on that difference between price and value that, and I quote, "Behavioral economics may provide us with clues about how quickly convergence between price and value will happen. That would be incredibly useful to an investor." [Unquote] And I'd like to ask if we've made progress since you wrote this 15 years ago.

Aswath Damodaran: No, I think it actually gets worse when you add noise to the process and you make the process messier. And I think that one of the things we're discovering is that we think providing more information to markets will make this process more efficient. And what we're discovering is that first, what we provide is data and it's noisy data and it's coming from sources that were not available 20 years ago. People get the data from Twitter or from a tweet from a CEO. The data is getting messier and noisier. So it actually makes convergence less likely rather than more likely, which means you can get mispricing that gets bigger and last for longer before it corrects now than 15 years ago.

Heiko Ziehms: So there's no behavioural equivalent to the CAPM or Fama French.

Aswath Damodaran: Asset pricing models are a complete dead end. I don't care about them. I've never cared about them. I might use the CAPM or a multifactor model to get a cost of equity, but that's the extent of my inclusion. Ninety nine percent of my time in valuation is spent on things that matter and asset pricing. And that's the problem in academia. If you ask them, where's the research and valuation, they point to the theory models on asset pricing, which are almost all not about pricing, but about building up discount rates. So who cares? Now, who cares about these asset pricing models other than the people who write papers that 40 other people read, but don't alter the way we think about value. So I think we're looking to the wrong place. We're looking for rescuers. It's not going to come from some academic writing a behavioral asset pricing model. It comes from looking at the data, using common sense and focusing on things that matter.

Heiko Ziehms: Let me turn to the evolution in your thinking about the equity risk premium, which is among the key parameters in valuations and often also key battleground in contentious valuations. Now, something you're closely associated with is the use of the implied equity risk premium. So backing out the premium the market is currently pricing rather than relying on long term historical averages. That wasn't how I understand most practitioners thought about the equity risk premium 40 years ago when historical premiums were the default. Could you walk us through how you're

thinking on the equity risk premium has evolved over your career and what drove the shift towards using an implied premium?

Aswath Damodaran: There is a truth out there. The equity risk premium is not a number you or I can invent. It's the price of risk in equity markets today. It's not up for debate. There is a number out there. My implied premium is just an attempt to assess what that number is. And you can disagree with the way I estimate cash flows, the growth rates I use, but the basis of what I'm trying to do is let's back out what the price of risk in the equity market is. And at least build around that number because that number is not going to come with 3 to 12% ranges.

You know, it's going to come up with a range of one to one and a half percent because we're talking about things that matter. This discussion has left common sense when we allow people to pick historical risk premiums. It's lazy. It's backward looking. And it's going to get us all it already is getting us into trouble in a world that has shifted under us because any time you use a historical risk premium, you're drawing on mean reversion that things would revert back to the way they used to. Do you really think so? Are we going to go back to 1986 sometime soon? The world is shifting. I can't think of a good reason or even a semi good reason for sticking with historical risk rates. But you know what? We've built an entire cottage industry in the appraisal business around historical risk rates. Roger Grabowski is a good friend of mine, but I would take issue with him every time. It used to be [that] Duff and Phelps, I think, now it's called [Kroll], release that thousand page cost to capital book all based on slicing and dicing historical data. One of the most dangerous exercises in valuation because you now have this illusion of precision because people have sliced and diced the data. Just let it go. It's a terrible way to estimate risk premiums, but it's a way that will stay on in both accounting and in legal valuation because you're on safer ground having something you can point to that other people have used in the past. Now, bad practices in valuation stay because once they become embedded, it's easier to use a bad practice than it is to do the right thing. Small cap premium again. I hate to pick on it, but it's one of the most horrific examples of sticking with something that disappeared 45 years ago. There hasn't been a small cap premium since 1981.

But we keep using it. Why? Because you're in front of a court and you don't use a small cap premium. The onus is on you, even though you're doing the right thing rather than the other side, which is doing the wrong thing. So I think that there is stickiness in this process. A lot of bad practices stay on because that's what has been done in the past.

Heiko Ziehms: I always have some trouble getting my mind around the big swings in the implied equity risk premium when markets move sharply, but there's no real news. So say Black Monday, 1987, or perhaps the week of the crash of 1929. In efficient markets,

the expected return should be the required return. And if expected cash flows, cash returns don't change, but prices change, then the required return changes. It's a mechanical relationship.

Aswath Damodaran: Let's take October 19th of 1987. Classic day in terms of a big change in prices. 22% drop of the S&P 500. No real news out there. Let's say that you were in a praser on October 15th of 1987. I came to you and I said, value a Procter & Gamble today. Come up with the value of Procter & Gamble, given where the market is today. That's always part of your mission. It's not to value the company and the market. It's none of your business. What do you think about the market? Because your job is to value the company, given where the market is today. So in October 15th, you'd have come with an equity risk premium that would be lower because the market was higher. You'd have valued the company and said, this company is worth \$81. It's trading at \$75. And you'd have moved on. A week later,

I come back to you and ask you to value Procter & Gamble again. Your mission is still the same, right? Value Procter & Gamble, given where the market is today. Market is 22% lower. What does that mean? Well, your equity risk premium just went up. Your discount rate should go up. Your value should no longer be \$90, which was a week ago, because now that the market has changed its mind on the price of risk, it should be worth less. It's a healthy thing to do is to adjust your valuations in its point, because if you don't, you know what's going to happen? Every company is going to look undervalued after a big market crash to you because you're stuck on a risk premium that you chose and you've stuck with it no matter what. In fact, I would argue that what you said is exactly the reason we need an implied equity risk premium. I computed the start of every month usually in the US for the S&P 500.

But during crises, if you've noticed, I go to day by day calculations. I did it in March of this year around the Iran war. I went I did it in May of last year, April of last year when that tariff month was playing out. I did during the COVID every day for a whole year in 2020. And I don't do it because I'm, you know, I'm punishing myself. I do it because if I'm valuing a company in any given day in a market that's shifting dramatically, it's my obligation reflected in the risk premium. And this again comes back from a fundamental misconception that people have about intrinsic value, which is if you do intrinsic value right, it should be stable. Say who? Why?

In what universe should intrinsic value stay the same if the world is collapsing around you?

I think we have to accept the fact that we live in a world where intrinsic value changes on a day to day basis, even if a company's characteristics don't change because the world is shifting around you.

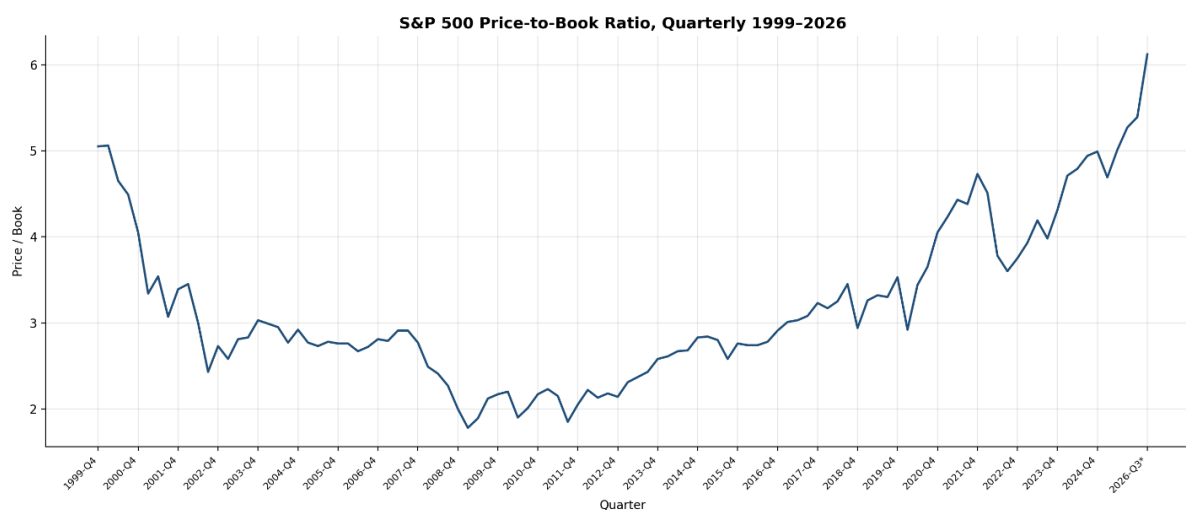
Heiko Ziehms: But the example of the correction of crash in 1987, for example, was in a world that was not collapsing around us. There was essentially no change, as I understand it, in the news.

Aswath Damodaran: But remember that value is a function of the price of risk. Your value changed because people, that's their right to do, right? You can't tell them, "Hey, you shouldn't have done that. That makes no sense." It's irrelevant. It's like you're complaining. If your house price drops 40%, that's not fair. A week ago, my house price was okay. It's demanded supply, right? It's not something that comes from theory. It comes from what people are willing to accept as a price of risk. So I don't need a rationale for changing my mind on the price of risk. It might be just something that's been bubbling up. One day I wake up and say, "You know what? I've been screwing up. I've been charging too little for risk." Most risk pricing adjustments don't happen in response to events. They're a collection of small cuts that lead you to it. The 2008 crisis started late in 2007 in terms of small things happening along the way that eventually built after the 2008 crisis. The 1987 meltdown had its roots in 1986 and small things that happened along the way. Now, behaviorally, you can say, "Why aren't you adjusting the price of risk incrementally as you go along?" Because as human beings, we wait for catastrophes. We wait for big changes. And all of a sudden, we wake up and say, "Oh, my God." But that's our right as investors to do. And you as an appraiser have to live in the world you're in, not the world you wish you were in.

Heiko Ziehms: I'd like to move to some current developments in the capital markets and link them to valuation. And to do this, I'd like to have a look at the price-to-book ratio of the S&P 500 since 1999, which is shown here.

I know, Aswath, you've written extensively about this. It's also one of the metrics that you track.

Now, historically, over even more years, the price-to-book ratio in the US may have been somewhere between two and three.



Source: multpl.com, S&P 500

And we can see that it was last over five for the S&P 500 in 1999, and it's now over six. I'd like to highlight some aspects just for context. So the S&P 500 is dominated by a few tech firms. Seven of the biggest, the Mag 7, currently make up around one-third. And Nvidia alone, for example, one of them, has a market cap as of today of around USD 5.5 trillion. And just for context, that's about the GDP of Germany, where I'm from.

And so one might look at this graph in different ways. One might turn to the handful of firms that drive the recent peak. One might be concerned that the value of the market, that the market sees is so decoupled from what's on the balance sheet that the market gets ahead of itself relative to the fundamentals. One might say it's really a shift to intangible assets and conclude that accounting is becoming increasingly less relevant. Say Apple's price-to-book ratio is 40, which means over 97% of its value is not accounted for on the balance sheet. And so I want to ask you, what are your thoughts when you see this chart? Does the development concern you?

Aswath Damodaran: First, what hat are you wearing when you look at this chart, Heiko? Let me give you the choices. You can wear the hat of a market strategist deciding which asset class is to put your money in. You can wear the hat of a portfolio manager deciding how much of their portfolio to put in stocks. You can wear the hat of an equity research analyst whose job is to value companies, whether the company is to sell the money. You can wear the hat of a CFO of a company looking at what does this mean for me as a company in terms of cost to capital and raising capital. So the first thing we need to do is stop thinking about the statistic as an abstraction, but start thinking about in what context am I thinking about. So let me take a different context. From a market timing perspective, does this mean stocks are overpriced? It could. No, in conjunction with other prices. But I'll also tell you that the price to book ratio has been above the 75th percentile for most of the last 15 years. So I have to be honest here, if this had been my

market timing technique and I was going to stay out of markets if the price to book ratio rose above the 75th percentile, I'd have been out of stocks the last 15 years. And I would definitely not have a job as a market strategist anymore because this has been an incredibly good period for stocks. So if it is a timing indicator, it's an extraordinarily noisy one.

So if it didn't change at 5.5, why is 6 the magical number? Why not 7? Why not 8? Why not 9? Why not 55? As a market timing metric, it's been an extraordinarily noisy metric and not very good.

I mean, in fact, I did a post on the Shiller PE, widely used market timing metric again, And I showed that over the 125 years of Shiller's own data, that you'd have beaten a Shiller PE timing strategy by just buying and holding. Unless you had, unless you could use the metric to work within six months, you got it not in terms of both timing and pricing, right. It wouldn't work for you. And I'd say the same thing about price. So it's a timing technique. It's terrible. As an individual company analyst, I don't even care. Because I'm selling an individual company. What does it matter to me? What Nvidia is and what the concentration is? I mean, that's a debate for somebody else to have. I have a company in front of me, the price to book ratio within time. From an accounting perspective, it's a disaster. It's a disaster because it shows you how irrelevant accounting has become over the last 40 years.

In fact, here's the irony. For the last 40 years, accountants have tried to insert themselves more and more in the investing process. What's that fair value accounting? It was entirely born of the fact that accountants said, we need to matter. Here's what we're going to do. We're going to try to make the balance sheet compete as a proxy for value at the market. How well has that worked out for you?

And I make a pretty categorical statement. Fair value accounting is an oxymoron. You can either be an accountant or you can value companies. You can't do both. So book values become less and less and less useful because accounting has lost its way. And our accountants are now wrestling with intangible assets. I love when they talk about intangible assets because intangible assets have always been around us. But the problem is you look at the 50 largest companies in the world. Now, most of them get the value from things you can't see. The problem is not that they're intangible, but that the accounting for those assets is incredibly inconsistent with the accounting for tangible assets. I'm a manufacturing company. I built a factory. What do you do? You show it as CapEx. It drains my cash flow. So it shows up in my statement of cash flows. And then I depreciate shows up as an expense.

I'm a company, a technology company. My biggest CapEx is R&D. What do you do? You expense it. Stupid, absolutely stupid on every level.

And what does it do? It makes book value for these companies almost meaningless. Apple's book value was negative. Forget about the 40 times book value. It was negative for a brief period because you do buybacks and your R&D is not capitalised. That company are always converging towards zero. Price to book ratios mean less and less because book value means less and less. There was a time in history where people thought of book values liquidation value. Let that go.

Book value is now just a collection of historical accounting changes that show up as shareholders equity and your balance sheet. It's the least useful number, the least useful number I can think of in investing.

So the price to book ratio, whether you're a market timer, an equity researcher, it looks different. But if you're going to make a case that stocks are overpriced, this won't do it for me. You've got to come up with something more tangible, something that I can relate to better. The price to book ratio doesn't do it.

Heiko Ziehms: But the price to book ratio may be so high because we do not have fair value accounting, generally speaking. We have historical cost accounting.

Aswath Damodaran: You know the biggest intangible of all is future growth. It's not things I've already done, but things I expect to do in the future. When anthropic goes public, no matter how good fair value accounting is, I guarantee you, I guarantee you that the book value of equity, you're going to come up with a lonely reflect what an anthropic has already done. And that's a small fraction of what driving its value. That's why fair value accounting's endgame is not clear to me. What are you trying to do? Because with growth companies, you're never going to get there. So why put people through this torture, other than, and this might be the cynical part of me, it gives a lot of accountants jobs. It's a make jobs for accountants, 80% of valuation revenues, we think about appraisal revenues come from fair value accounting, one of the most useless exercises known to man. That goodwill impairment that he spent six months doing and charging me millions of dollars today, you know what the reaction to a typical goodwill impairment at the market is? Zero. Because by the time it happens, everybody knows it's happening. So it's become this exercise in dotting your I's crossing your T's and then reverse engineering something that's already happened. Well, what's that going to accomplish?

Heiko Ziehms: I'd like to end by looking forward. And I'd like to fast forward a hundred years from now and let's say our great grandchildren or even our great great grandchildren were having the same discussion a hundred years from now that that we're having. How do you think they might look back at this time and perceive our valuation technology? Would you expect that they might consider it to be very

simplistic? They might look at it. Perhaps the way we today look at communications technology of a hundred years ago.

Aswath Damodaran: My worry is that they've outsourced all of this to machines a hundred years ago from now. The way you find the value of companies, you're going to ask your local bot, which would be a fairly advanced version of what we see today. What's Microsoft Word? And it'll probably have every remember everything you've ever done in history. Every paper written, every book written, every spreadsheet is in that bot. That's a scary thought. It's something that's read everything, watched everything, remembers everything.

It'll you know what I worry about is if something breaks. My great, great grandchildren will not even know it's broken because they won't even know what questions to ask if it's broken. My worry is we're already starting to lose. That's why I talked about how valuation has spun off course is we're losing the capacity to ask common sense questions, business questions, because everything becomes an argument about an equity risk premium, an input in a spreadsheet or a line item on CapEx. Now we need to step back and regain that common sense and pass this on to our kids and our grandkids so they will know the questions to ask their bots who might be doing the valuation just in case things start to break up.

Heiko Ziehms: What's your best guess: what will be your standard approach to valuing a firm in 100 years' time if it's not entirely done by machines? What do you think business schools will teach their students?

Aswath Damodaran: Will there be business schools? I mean, you don't even need to go 100 years. I think, I mean, I look forward a decade, two decades, and I'm not sure that there will be business schools out there because so much of what we teach is content. So much of what we teach is things that a machine can pick up almost effortlessly. I don't think there'll be business schools 100 years from now. I don't think they deserve to survive 100 years because I don't think, you know, the capacity to reason and think your way to an answer is not something that business schools should be teaching. It should be starting second grade and third grade. And we need to start to think about ways we can ingrain this in people because we're coming. It's a transition because for 100 years we rewarded people for learning content and become specialists. We need to kind of reorient our way away from that because that's not a skill set that's going to make you special anymore.

Heiko Ziehms: So that's a good note to end on. Thank you so much for joining us today, Aswath. It was a great honour and pleasure speaking with you.

Aswath Damodaran: Thank you. Appreciate it. Thank you.