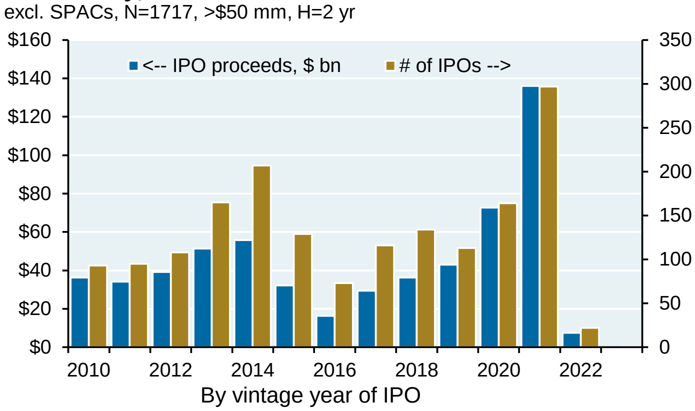
00;00;00;14 - 00;00;30;44
Michael Cembalest
Okay. Good morning, everybody. This is Michael Cembalest with the Eye on the Market podcast, which is now both in audio and video versions. So thanks for listening. Every couple of years I write a deep dive paper on private equity and venture capital from the perspective of limited partner investors in those investment vehicles. And I decided to switch it up this year instead and write about the IPO market, which are the companies that all of those financial sponsors bring public.

00;00;31;20 - 00;01;00;39
Michael Cembalest
And I decided to do it now because enough time has passed for us to assess the impact of the crop of 2020 and 2021 IPOs on the investment universe. And it's not pretty, but it's not as bad as you might think. So that's what this IPO paper is all about. It's called Mr. Toad's Wild Ride and is drawn from a Disney RKO short film from "The Wind in the Willows" in 1949.

00;01;00;41 - 00;01;22;57
Michael Cembalest
So with that, let's get started. And obviously you can look in the Eye on the Market for all the details. I just wanted to hit some of the highlights on this podcast. So for many years, here's the irony. There was a lot of hand-wringing in the industry and by academics that there was a slowdown in the pace of new listings and IPOs.

00;01;23;14 - 00;01;44;23
Michael Cembalest
And my answer is be careful what you wish for. You just might get it. Because we had an explosion of IPO activity in 2020 and 2021, both of which have now collapsed in large part because of the poor performance of some of those recent vintages. And that's what we discussed and analyzed in this paper.

IPO activity, All sectors
excl. SPACs, N=1717, >$50 mm, H=2 yr



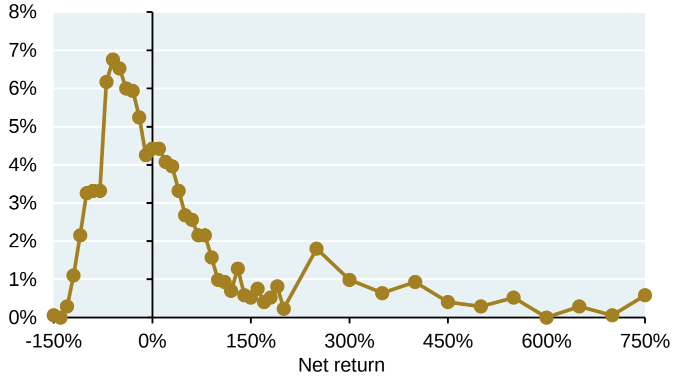
Bloomberg, JPMAM. 07/13/2023

00;01;45;06 - 00;02;13;31
Michael Cembalest
So the thing to remember about IPOs is they're a very skewed asset class. Here we're looking at net returns of IPOs over two years. And net means

net of an equity market benchmark. Right. You always have to analyze IPOs relative to something. What's your opportunity cost? And here we're using the Small Cap Growth Index as a benchmark because there's lots of tech and biotech and healthcare that dominate IPO issuance.

Distribution of IPO net returns, All sectors, H=2 yr

excl. SPACs, N=1717, >$50 mm, H=2 yr, vs S&P Small Cap Growth



Bloomberg, JPMAM. 07/13/2023

00;02;13;31 - 00;02;36;18
Michael Cembalest
And so that's why we're using a Small Cap benchmark. And here you can see the skew. The vast majority of these lose money over a two-year basis relative to the benchmark. But then you've got this tail of mega-winners, which offsets that. And the value proposition for long-term investors in IPOs has always been, do the handful of winners offset the bulk of the losers?

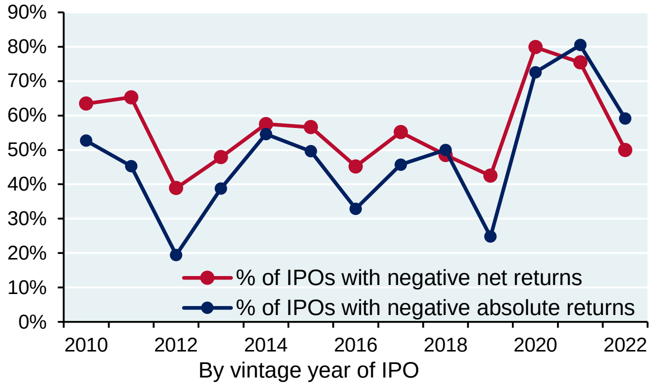
00;02;36;32 - 00;03;04;12
Michael Cembalest
And until 2020, the answer to that question was generally yes. But then this recent crop of IPOs really kind of damage that story because there were so much of them. So let's take a closer look. And here, look what I mean by the skew in the market. If we take away just the top 3%, best 3% performing IPOs, look what happens to your average absolute return and your average net return.

Impact of removing top X% of IPOs on returns

remove top:	0%	3%	5%	7%
Average net	14%	-4%	-10%	-15%
Average absolute	30%	12%	6%	1%

00;03;04;56 - 00;03;30;55
Michael Cembalest
They get hit pretty hard. And so that's an example of a very skewed market. So here is another way of looking at things. This is the share of all IPOs that either have negative absolute or net returns two years later. Obviously, relative to that benchmark, we're talking about, even in good times, somewhere between 30% to 50% or a little more of these IPOs generate negative returns.

Share of IPOs with negative returns: All sectors
excl. SPACs, N=1717, >$50 mm, H=2 yr, vs S&P Small Cap Growth

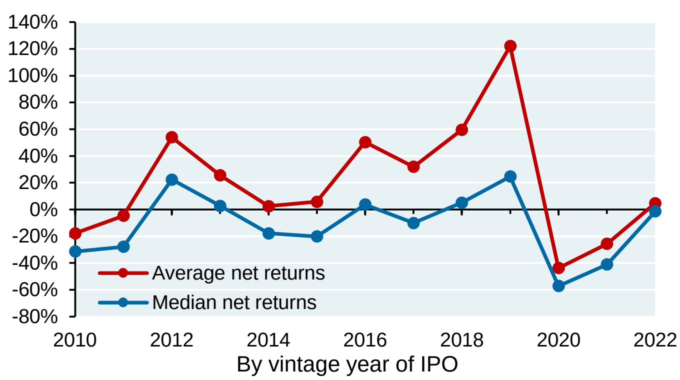


Bloomberg, JPMAM. 07/13/2023

00;03;31;18 - 00;03;59;10
Michael Cembalest
Look what happened in 2020 and 2021. We had a surge in the number of underperforming IPOs. So, this was unfortunately the confluence of monetary stimulus, fiscal stimulus, lots of risk appetite, and a lot of companies that were brought public that probably shouldn't have been. And here, this is another way that we track how the IPO market is doing.

00;03;59;41 - 00;04;25;28
Michael Cembalest
The orange line is the average return, and the blue line is the median return. Any skewed universe is always going to have a much higher average than median return. Activist investing is another great example of that. And from 2010 to 2019, even though the median deal that you might have invested in didn't make any money, on average you did because of those handful of winners.

Net IPO returns by year, All sectors
excl. SPACs, N=1717, >$50 mm, H=2 yr, vs S&P Small Cap Growth



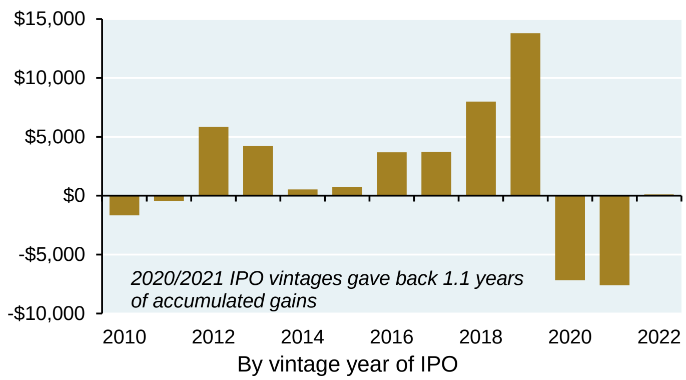
Bloomberg, JPMAM. 07/13/2023

00;04;25;51 - 00;04;53;49
Michael Cembalest
So on a two-year basis, the value proposition of IPO investing for the decade of the 2010s was a positive experience. And then look what happened from those 2020 and 2021 IPOs. They really kind of decimated the history of this thing. To understand the impact on an IPO investor, we

can't simply compound these annual returns because in 2020 and 2021, there were so many more IPOs that got issued.

00;04;54;18 - 00;05;19;34
Michael Cembalest
So we use a simplified portfolio framework to say, well, what if somebody put $100 into every IPO, held it for two years before selling and then measured their performance versus that Small Cap Growth Index? Here you can see that you would have made money for the vast majority of that 2010s decade. And then you would have given a bunch of it back in 2021 and 2020.

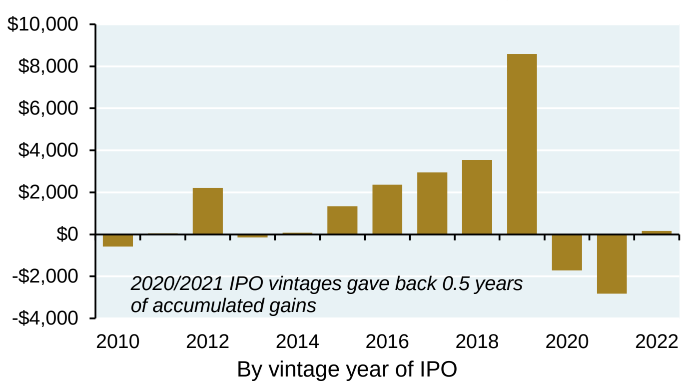
Annual IPO portfolio net cash flows, All sectors
excl. SPACs, N=1717, >$50 mm, H=2 yr, vs S&P Small Cap Growth



Bloomberg, JPMAM. 07/13/2023

00;05;19;54 - 00;05;45;40
Michael Cembalest
And specifically, if you invested in all sectors, you would have given back all of your gains from 2019, which are substantial, but you would have still retained those gains from the prior decade. And so, let's dig into this because there's a big difference between tech and healthcare and specifically biotech. If we look at technology, this is really the brightest spot of the entire IPO market.

Annual IPO portfolio net cash flows, Technology
excl. SPACs, N=467, >$50 mm, H=2 yr, vs S&P Small Cap Growth



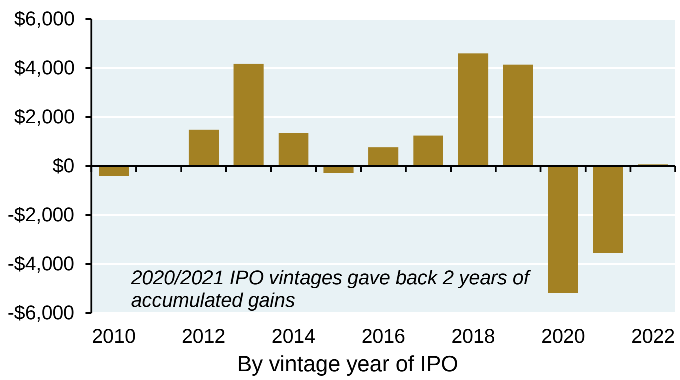
Bloomberg, JPMAM. 07/13/2023

00;05;46;04 - 00;06;14;02
Michael Cembalest
And even with the 20, look at this chart, even with the 2021 and 2020 vintages, you only gave back a half a year versus your accumulated gains.

And so, in other words, yeah, the crop of 2020 and 2021 IPOs and the technology sector had their issues, but they only mildly dented the historical returns a long-term IPO investor would have had. Looks very different in the healthcare sector.

00;06;14;11 - 00;06;42;34
Michael Cembalest
The chart on healthcare shows you gave back not just half a year, but two years of accumulated gains. And biotech and pharma is an interesting place as it relates to the IPO market. The premise is to give investors a chance to recognize the value creation associated with the proof of concept on the drug. So that would be phase three trials,

Annual IPO portfolio net cash flows, Healthcare
excl. SPACs, N=608, >$50 mm, H=2 yr, vs S&P Small Cap Growth



Bloomberg, JPMAM. 07/13/2023

00;06;42;52 - 00;07;20;11
Michael Cembalest
FDA adoption, entitlement program coverage and things like that. But since you're exposing investors to those positive events, whenever they don't happen, you can lose a lot of money. And that's part of what happens in the IPO market. And the longer you hold some of these IPOs in the healthcare sector, the worse they actually do. So the table that we're showing here that obviously you can look at in the Eye on the Market as we increase our holding period from one year to two years to three years, the technology sector returns go up, whereas the healthcare returns actually go down.

Average net returns by sector and horizon
excl. SPACs, N=1717, >$50 mm, vs S&P Small Cap Growth

	1 yr	2 yr	3 yr
Technology	21%	34%	41%
Software	28%	48%	56%
Internet	13%	38%	36%
Healthcare	**11%**	**14%**	**7%**
Pharma/Biotech	**11%**	**14%**	**5%**
HC Services	**10%**	**13%**	**14%**
Consumer	20%	10%	1%
Diversified	3%	-7%	-7%

Bloomberg, JPMAM. 07/13/2023

00;07;20;56 - 00;07;41;56
Michael Cembalest
The first table that we have shows the average returns. When you can really see this, is the median returns. And so when we look at the median returns, they really get hammered in the healthcare sector, whether we're looking at healthcare services or pharma and biotech as we go from one to two to three years.

Median net returns by sector and horizon

excl. SPACs, N=1717, >$50 mm, vs S&P Small Cap Growth

	1 yr	2 yr	3 yr
Technology	-3%	-11%	-9%
Software	0%	2%	-2%
Internet	-5%	-10%	-26%
Healthcare	**-13%**	**-39%**	**-57%**
Pharma/Biotech	**-15%**	**-39%**	**-60%**
HC Services	**-5%**	**-31%**	**-39%**
Consumer	7%	-2%	-28%
Diversified	-1%	-19%	-23%

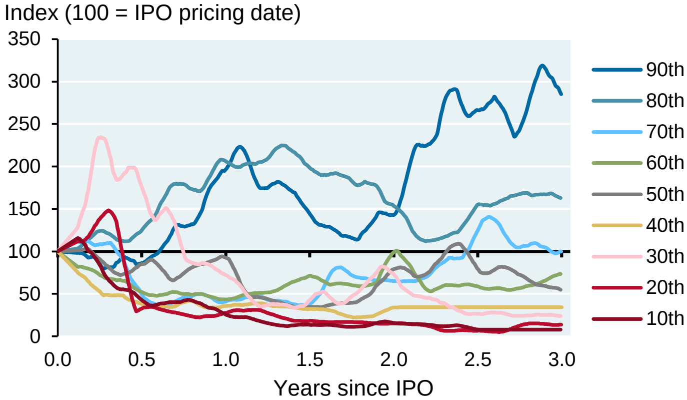
Bloomberg, JPMAM. 07/13/2023

00;07;42;27 - 00;08;02;32
Michael Cembalest
So as I said, what is happening between years one, two and three in the healthcare sector to make these IPOs underperform so much? And what we did was we looked at all of the hundreds of healthcare IPOs over the last 13, 14 years and between years one and two, an enormous number of them crash and burn.

00;08;03;04 - 00;08;27;44
Michael Cembalest
So we have a chart in here that looks at them by decile, right? So we take all these pharma biotech IPOs and we decile them. Even the 70th percentile biotech IPO didn't make any money. It was flat. Right. So you actually go to the 80th percentile of IPO performance to make money. The rest of them were either flat or lost a lot of money.

Pharma/biotech absolute returns by percentile since IPO

Index (100 = IPO pricing date)



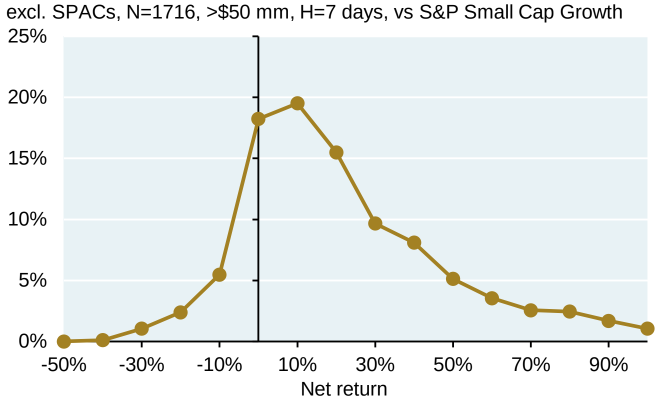
Source: Bloomberg, JPMAM. July 13, 2023. 30 day smoothing.

00;08;28;02 - 00;08;53;27
Michael Cembalest
And so, again, there's a lot of drug development failures that take place. And you're really participating in this for the handful of winners. In contrast to all of this analysis, we also looked in this study at IPO flipping, right. So IPO flipping is a casual way of saying that people buy IPOs and sell them within a few days, and a few days either meaning literally the end of the first day close or within seven days.

00;08;54;07 - 00;09;16;59
Michael Cembalest
And this is kind of a remarkable investment Opportunity said, I haven't seen too many things that look like this in terms of just how stacked in favor of the investor is. So this chart, we have a bunch of different charts in the paper on IPO flipping, but this one shows the distribution of returns. Overwhelmingly, 80% of the time, IPO flipping has worked.

Distribution of IPO net returns, All sectors, H=7 days

excl. SPACs, N=1716, >$50 mm, H=7 days, vs S&P Small Cap Growth



Bloomberg, JPMAM. 07/13/2023

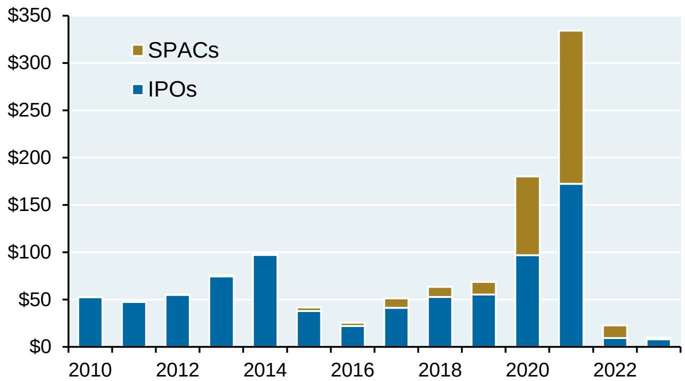
00;09;17;22 - 00;09;39;40
Michael Cembalest
Now, when it doesn't work, you can still lose a serious amount of money. But when you look at the weighted average outcomes from IPO flipping, they're extremely beneficial to investors. And not only that, even with the bad crop of 2020 and 2021 IPOs, they didn't really do a lot of damage to the history of IPO flipping. So it's been a very successful category.

00;09;41;21 - 00;10;09;53
Michael Cembalest
I do want to spend a couple of minutes on the SPACs because more than the metaverse and more than unprofitable hydrogen and EV companies and crypto and things like that, SPACs are probably the best example of too much policy, too much risk appetite, and people completely losing sight of all their underwriting bearings. And I wrote about SPACs during the peak of the boom in early 2021.

00;10;10;29 - 00;10;34;58
Michael Cembalest
It was a piece called Hydraulic Spacking that was very critical of the adverse selection of companies that were coming public. And everything

that's happened in the SPAC market since then has been borne out by that initial fear I had about what was going on. We have a chart in here that shows that SPACs grew to be the same size as the entire IPO market in 2020 and 2021, which is ridiculous, since it barely existed before that.

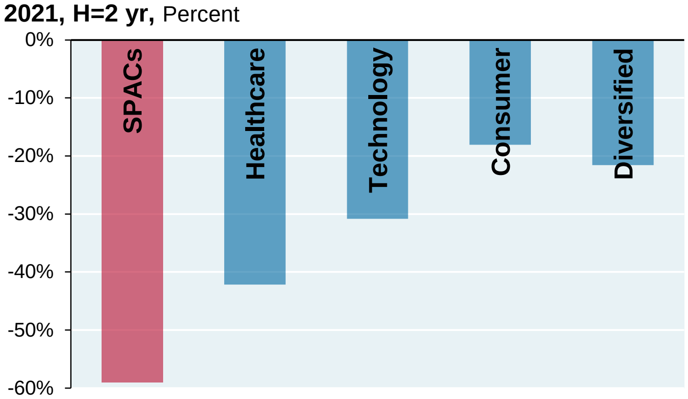
US public listing proceeds by type, $ billions



Bloomberg, JPMAM. 07/13/2023

00;10;35;29 - 00;11;03;21
Michael Cembalest
And if we take a look at the average returns on SPACs relative to the market, they've lost almost 60% versus the stock market. I mean, I've rarely seen anything as bad as this. And so I anticipate that there's going to be a permanent demise of this particular financing approach, say for a handful of these things every year.

Average IPO/SPAC net returns for vintage years 2020 and 2021, H=2 yr, Percent



Bloomberg, JPMAM. 07/12/2023

00;11;04;08 - 00;11;32;11
Michael Cembalest
So that is a very quick overview of some of the more important and interesting parts of this IPO analysis. We also looked at the consumer sector, the diversified sector. We looked at mainland China, we looked at renewable energy IPOs, which has been have been a very difficult place to invest. We've looked at size effects and we also looked at financial sponsors because I wanted to see how the sponsors are doing themselves.

00;11;32;26 - 00;11;56;01
Michael Cembalest
Now, it's not the job of a financial sponsor to generate great returns post-IPO, right? Financial sponsors job is to deliver high returns to the limited partners in their vehicles. But as investors in IPOs and as people who manage money in public equities, I was interested in whether there were any consistent patterns of financial sponsors bringing good deals to market or not.

00;11;56;46 - 00;12;16;01
Michael Cembalest
And so we get into that a little bit in the paper, and we do show a list of the financial sponsors that have had the best track record of bringing IPOs to market that maintained their value two years later. So anyway, thank you very much for watching and listening. The Eye on the Market is available to look at today.

00;12;16;37 - 00;12;27;31
Michael Cembalest
In early September, we'll revisit the business cycle and whether or not this recent immaculate disinflation is sustainable. But until then, thank you very much for listening, and we'll see you next time.