Let the [Micro] Chips Fall Where They May

Anu Rajakumar: In 2021, the Asia Pacific region, commonly referred to as APAC, attracted over $535 billion in foreign direct investment with a significant portion directed towards the technology and semiconductor industries. In our previous episode, we discussed the upcoming US election and its impact on equity markets. As equities have been turbulent in recent weeks, today we turn to the APAC market to unpack the influence on the broader investment landscape. How have large-cap companies, such as NVIDIA, impacted the Asia equity market and supply chains? what influences does this market have on artificial intelligence and other global technology companies? And finally, how should investors consider the Asian market in relation to the US? My name is Anu Rajakumar and joining me today is Eileen Furukawa, Portfolio Manager on the Emerging Market Equity team focusing on technology and internet sectors. Eileen, welcome to the show.

Eileen Furukawa : Thanks for having me.

Anu: Well, Eileen, it's been a really eventful few weeks with some rather big movements happening in the technology sector really globally, particularly in Asian technology companies. Could you start by telling us a little bit more about the dynamics at play there?

Eileen: Well, you're exactly right. In the last month, we've seen extreme volatility in the global tech sector, which has been led by NVIDIA. And, if we just look at the last month, we saw NVIDIA's stock drop 20% from its monthly peak, wiping out over $635 billion in market cap. To put that into context, NVIDIA lost almost the total market cap of Tesla, another Mag Seven stock. Or if we look at another stock that's recently been in the news, Starbucks, NVIDIA lost as much as six times the total equity value of Starbucks, which is incredible.

But even more striking is that in a recent five-day period, we've seen NVIDIA bounce back over 23%, adding back over 575 billion in market cap, bringing this stock roughly flat for the month despite all this volatility, and we've also seen extreme daily volatility. We've had single day moves in both directions up and down, 12%. And so, what's amazing about all of this is that it's happening to a company, which until recently was the largest company in the world by market cap. And that's why these recent moves have been so striking to us because we would typically expect that these types of mega-cap stocks would be rewarded with more stability and less volatility. So, when we look beyond NVIDIA what's been interesting is the huge impact NVIDIA stock moves have had, not only on the rest of the US market, but also on the Asia markets as a whole.

Anu: Yeah. You know, those numbers are absolutely astonishing. And just out of curiosity, have we ever seen that, those kind of movements, like 12% up and down from companies just in recent history that you're aware of?

Eileen: I mean, the last time we saw this type of volatility, and it was really more one-way volatility, was financial crisis-

Anu: Yeah.

Eileen: -or COVID.

Anu: Sure.

Eileen: Right? And-- But those were sort of more one way and lasted a little bit longer.

Anu: Right. Yeah.

Eileen: I mean, this is one way, and then in five days coming back to flat is pretty unprecedented.

Anu: Yeah. It's kind of a, you know, a new territory for a lot of market participants. You know and Eileen, sometimes it feels like there are just two companies driving today's modern economy, NVIDIA, which you just spoke about, and its main supplier,

the Taiwan Semiconductor Manufacturing Company or TSMC. Why don't you tell us a little bit more about that relationship and NVIDIA's impact on the Taiwan tech market and the supply chain just in general?

Eileen: Sure. So, as you know, NVIDIA is the leader in AI, and they have a large reliance on the Taiwan supply chain. And therefore, NVIDIA also has an outsized impact on the Taiwan tech market. NVIDIA basically relies on many of these Taiwanese tech companies, especially TSMC, to produce all of the AI GPU chips that NVIDIA designs.

So, this whole route to volatility, in large part, more recently started with recent chatter in the Taiwan supply chain, that there could be delays in the planned release of NVIDIA's B100 Blackwell chip, which was slotted to come out at the end of 2024, early 2025, but what we were hearing in the supply chain is that there could be some design issues. And that's when panic set in because a lot of investors assumed that NVIDIA had made some sort of design error.

But when we looked into it and other investors looked into it, it seems that the issue is really more about the Taiwan supply chain than NVIDIA. In fact, NVIDIA was really ready to run a four-minute mile, but the supply chain could still only run an eight-minute mile.

Anu: Okay. Well, I still think an eight-minute mile is pretty good, but why don't you tell us kind of what happened next? What were the next steps in that issue?

Eileen: Sure. Specifically, NVIDIA's plan Blackwell B100 chip design needed to have two chips packaged and tied together, which required newer packaging technology from TSMC called CoWoS L. And that's where the issue is perceived to be. And because there was an issue in CoWoS L, NVIDIA needed to come up with a workaround.

NVIDIA is reportedly planning to separate this B100 chip into two separate chips, which they will now be sold separately, and we'll call each of these new chips B200A chip. The reason this works is they can now package these split B200A chips using the older CoWoS S technology that works.

On the brighter side, while each of these B200A chips has just half the performance of the B100 chip, since they're split in half, they're still better than NVIDIA's current offering of the H100 hopper chip, and they're still better than all the competitors. So, on the positive side, NVIDIA's also not likely to cut the price of the B200A chip by 50%. So, the net ASP of these new chip sales should be a higher ASP per performance than the previously planned B100 chip. But the downside is, of course, that there could be a one to two-quarter delay.

Anu: Sorry, just a quick question. What is ASP? You just mentioned the net ASP is going to be, higher performance.

Eileen: Oh. Yeah, that's the price per chip.

Anu: Okay.

Eileen: So, they were selling one chip that was two combined together for, let's say, X price. You would think that each of the separate chips-

Anu: Yep.

Eileen: -would be sold for one-half X.

Anu: Yes.

Eileen: But it's probably not going to be, it's probably going to be-

Anu: Okay.

Eileen: -75% of X. So, you know, ironically, or luckily, I guess, NVIDIA's probably going to make more money in a way [laughs] of these chips.

Anu: From this workaround.

Eileen: Yeah, for this workaround.

Anu: Interesting, all right.

Eileen: Yes, exactly. So anyway, what's interesting is also the ripple effect from these NVIDIA rumors on the Taiwan market. So, you saw names like TSMC acted just like NVIDIA, and fell over 22% in a month, and then they also bounced back in five days by 16%.

But more striking is that the entire Taiwan index followed suit falling 18% from the peak in the month and bouncing back over the last five days by 11%. This also caused investors to scramble and try to figure out who are the winners and losers from this delay? Because the current NVIDIA Hopper H100 chip will likely stay relevant a lot longer than people expected due to these delays. And similarly, the CoWoS S providers for the B200A are also likely winners while those tied to the more advanced CoWoS L-related chips could see further delays.

Anu: Wow. Okay. Well, let me just give you my quick observations about what you just said. First of all, I've learned more about chips in the last, you know, two or three minutes than I think I have in my life, so very interesting. Secondly, I want to highlight that high correlation that you mentioned between NVIDIA and TSMC as well as NVIDIA and you know, you mentioned the entire Taiwan index as well. Out of curiosity, how big is TSMC within the Taiwan index?

Eileen: So, TSMC is the largest market cap company in the Taiwan index. In fact, it's about 50% of the MSCI Taiwan index. And in terms of what I look at the emerging markets, it's probably approaching 10% of the whole EM market and it's certainly the largest weight in my index. On top of which, just as an aside, TSMC is probably roughly 15% of the GDP of Taiwan.

Anu: Wow, like I said, amazing, stats over there. You know, you spoke a little bit about volatility, and I had recently read that NVIDIA is now more volatile than Bitcoin, which is a bit jaw dropping. So, I was wondering, how does the volatility in NVIDIA stock reflect some of the broader trends in AI and semiconductor industries as well as some of the other major players such as the Magnificent Seven?

Eileen: Sure. So, what we've recently seen is that when investors started to see NVIDIA's stock falling, general panic arose and tech specialists were out there trying to figure out, was there a delay at NVIDIA? Why was there a delay and whose fault was it? But you also had generalists starting to panic and think that the AI trade in general was over and that it was a bubble, and it is now burst.

So, companies that logically should have benefited from NVIDIA's delays, like AMD and Intel, instead fell by a similar magnitude as investors saw NVIDIA's stock drop and then extrapolated that this simply meant that the AI bubble had burst. But once it became clear that the stock weakness was related to an NVIDIA specific delay, NVIDIA's stock bounced back. But what's interesting is all these other stocks bounced back less. And so, you have, kind of, a similar analogy to the ASICs space because, again, with NVIDIA's delay, this should have benefited the ASIC players.

Anu: Sorry, just to clarify, ASIC is another type of chip.

Eileen: Exactly.

Anu: Okay.

Eileen: So, ASICs are AI chips that are designed by basically the large cloud players like Google, Amazon, and Microsoft. And the reason that they're designing these chips is basically to save costs, because as you know, AI is very expensive. AI chips are very expensive. So, the advantage of these ASIC's chips are they're much cheaper, but the disadvantages are they're less powerful, and they can only do one task. But with NVIDIA's delay, you would've expected these cloud players, perhaps, to pivot some of their budget towards ASIC chips.

But what you saw was companies in the ASIC chain, like a Broadcom and Marvell in the US, and like an AI chip in Taiwan, followed the same pattern that NVIDIA did, even though they should have been seen as beneficiaries.

Anu: Yeah. It just seems like it's just a broadly-- everyone is just going up and down together, and kind of moving in a similar-- in a similar fashion.

Eileen: Yeah. And it's not just, you know, TSMC as the foundry piece of it, but there's all sorts of, there's 20 different steps and there's 20 different steps and there's many different companies, both in the US, Taiwan, and globally that are part of these various supply chains.

Anu: Yeah, it's a complex ecosystem. You know, with that in mind, how important is it for investors to really understand these dynamics between these US tech companies, which we read and hear so much about in the press, and the Taiwan supply chain? And how do you suggest listeners stay informed?

Eileen: So, I think it's pretty essential for US tech investors to understand what's going on in the Asia tech markets and vice versa, given the rising interdependence in these two markets. The biggest trend in tech currently is AI and the leaders in AI are based in the US. The biggest makers of the leading-edge AI chips are NVIDIA and AMD also based in the US.

The biggest buyers of AI, GPU and ASIC chips are in the US, also, the US cloud players. So, it's pretty essential for Taiwan tech investors to understand the roadmap supply and demand dynamics with these US tech players to fully understand the Taiwan supply chain. On the flip side, US investors that follow the Taiwan tech names have a real advantage.

Taiwan, unlike the US, requires their companies to report monthly revenues, not just on a quarterly basis. So, at the same time, because the production of chip starts in Taiwan earlier, timing and issues are often found first by the channel checks with the Taiwanese companies. And in fact, the first news of the potential NVIDIA delays was discovered through Taiwan company channel checks.

So, we would recommend that global tech investors follow Taiwan monthly revenue reports and trends. And we think that engaging with Taiwan tech companies and their monthly data points will let investors get an earlier read get an earlier read on quarterly tech trends and discover potential hiccups in production.

And so, for all these reasons, we think it's a real advantage to be part of a global firm like Neuberger, where we have research analysts based not only in the US markets but based locally in the key tech markets like Taiwan, Korea, and Japan so that we can have a better view of the entire global tech chain.

And, you know, looking ahead, we think as increase worries regarding AI trends emerge, and as investors try to navigate through this volatility, we expect there to be increased scrutiny on tech earnings support compared with earlier in the year. So, we think monitoring both the Asia tech market and the US markets to try to better understand these tech trends is even more important.

Anu: Absolutely. I think that all makes so much sense with these, like, really critical companies and markets that are really driving the global economy. Eileen, that's been a terrific set of information, really important stuff. Before I let you go, I have to ask you a quick bonus question. We've been talking today a lot about all different kinds of chips, technology, artificial intelligence, but I'd love to know what is your favorite smart gadget or tech tool and why?

Eileen: So, that's a very good question. I have a pretty boring answer, I believe, which is to say my iPhone, of course, is my favorite tech gadget, I use it constantly and I would say. I'm going to go real old school, the most helpful piece or the most helpful app on my phone is Google Maps.

Anu: [laughs] Like, can you believe that we ever lived without it and-- [chuckles]

Eileen: Exactly. I cannot live without Google Maps, so that's very old school. I guess my newest favorite app is OpenAI, ChatGPT.

Anu: Yes.

Eileen: That's definitely my newest new favorite app, but if I have to pick one, I'm still going to go with Google Maps.

Anu: Good and trusty. I concur, and I second that terrific, recommendation. Eileen, thank you so much for joining us today. We've covered lots of ground, you discussed the outsized impact of NVIDIA on the Taiwanese tech market and really just that rising interdependence on these markets and of course, the importance of, as you mentioned, following not just the US technology companies like NVIDIA, but also following the Taiwan tech names, to fully understand the supply-demand dynamics at play here. So, I just want to thank you very much for your time and hope we see you again soon.

Eileen: Thanks for having me.

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