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Mark Noble

What happens when access to consumer technology becomes a matter of national security? That seems to be what's happening with semiconductors and other key transformative technologies as the world's two largest economies, the United States and China, wrestle over who can be the dominant power for technology supremacy. Hello, I'm Mark Noble, executive vice president of ETF strategy at Horizons ETFs. And once again joining us on the latest episode of Generation ETFs is Angelo Katsoras, geopolitical analyst at National Bank. Angelo has been closely monitoring the geopolitical impact of both the semiconductor supply chain and the broader technology supply chain and how these sectors continue to transform how the US and China deal with both the economic and security concerns related to consumer technology. The latest salvo in this ongoing struggle is the recent passing in the US of the CHIPS Act, which received bipartisan support in both the Senate and Congress.

Mark Noble

The bill provides approximately \$280 billion in stimulus to help solidify US leadership in the semiconductor production, with approximately \$52 billion in direct consumer subsidies to chip manufacturers, largely in the form of incentives to build fabrication facilities and other types of businesses on the continental United States. But rather than this being the end of the economic back and forth between China and the US, this is likely just the first of many mega stimulus packages that'll be used over the next few years. According to Angelo's latest geopolitical briefing, China is likely to hit back with stimulus of their own as the two economic titans will continue to clash for supremacy in a range of transformative technologies that not only include semiconductors, but also electric vehicles and alternative energy sources, Angelo, thanks for joining us again today to really hammer out what's going on here on the geopolitical landscape, which is likely going to have a larger knockoff on the investment landscape for some of these key technologies.

Angelo Katsoras

Thank you for having me.

Mark Noble

So when we last spoke about a year ago, you personally highlighted that the US CHIPS bill was likely headed to pass and would not have significant implications for the future of the semiconductor industry. Now that it has passed, what are your thoughts on the bill itself? Do you expect that it will bring significant investment in the US sector, or is this just a drop in the bucket in part of a larger global economic struggle?

Angelo Katsoras

I think first of all, it's interesting because it marks a really turning point where the West and the United States went from trying to criticize the western Asian countries from subsidizing industries to basically saying, "If we can't beat them, join them," and now we're doing our own industrial plans and subsidies. And I think for this subsidy here, particularly the \$52 billion going directly to manufacturing, I think it's more of a beginning. Because it seems like a lot, when you make your most advanced semiconductors, it can be well over \$10 billion. So, I wouldn't be surprised if a year or two down the road you and I are talking about, I don't know, CHIPS Act 2, right? Yeah. And the world is, in some cases Europe's already put in place their subsidies, Taiwan, South Korea, Japan, China, they all have sometimes, in cases, larger subsidies.

Angelo Katsoras

I think that another take is that it really hammers home as an investor, in addition to analyzing revenue and business plans, you have to analyze what's strategically important for the country in question. That becomes part of your investment analysis. And I think this act also is a bit of a game changer, and that's that the act stipulates, really for the first time in my knowledge, is that if you want to get money for the subsidies, you can't put in place certain types of advanced semiconductor manufacturing in China. Before companies were barred from investing in companies under blacklisting, this now basically says you cannot go into China for advanced semiconductor manufacturing if you want to receive the subsidy. So this is a bit of a game changer, and I can see this also sets a precedent. I think when you see other subsidies for other sectors, whether it's rare earth mining or other key technologies, you might see similar clauses put in place going forward.

Mark Noble

Yeah. I think that, also to your point, is it means that you have to look at some of these sectors beyond their balance sheet. You have to look at the fact that there's going to be almost a – I would call it a put – to use an investment term, on how much these companies can lose. Because right now it seems like this might be the beginning of blank check writing from large economies, not just United States and China but also Europe, to fund what they're viewing as critical security infrastructure of semiconductor production.

Angelo Katsoras

No, you're right. And it means that, as you mentioned before, it's too important to fail, and has a lot of political calculations. You mentioned Europe. Making semiconductors is a very automated process. Europe has some of the highest electricity prices in the world, so if you were to do something from a purely economic perspective, you wouldn't be putting your semiconductors in Europe, unless Europe was going to shower you with a whole lot of financial support, which is the case. And so that's what makes this industry important to look at from a geopolitical angle as well, going forward.

Mark Noble

I know you're a great student of history. I don't really recall, at least myself, in terms of anything in the last 40 years, that resembles this type of direct stimulus for industry. Maybe the energy sector, but it really does seem to harken back to more economic nationalism of the '70s and '60s. I don't know what your thoughts are on that.

Angelo Katsoras

No, I do think you're right. It goes back to a time when countries tried to stockpile reserves of crucial sectors, they tried to build up their own capacity, something that kind of went away. And I think we might have talked about it in our last podcast. Up until recently we were what I called a high trust global economy, where we based things solely on efficiency, not on geopolitical factors. And so you kept minimal supplies of things, but now in a low trust economy that doesn't work. And so basically you stockpile, you stockpile reserves of semiconductors, you put in place your own capacity, even if it means what you get in economic security you lose in economies of scale.

Angelo Katsoras

And I think when we grew up, we were lucky to have grown up at a time where we grew up in a high trust economy, but I think we're returning to history. And we were the exception to the rule over the last 30 years, and returning to a low trust economy is what has been the norm. And this is what we're seeing. You see that, for example, at Tesla or other companies when they buy minerals. They no longer go to the spot market, they lock it up.

Mark Noble

Yeah.

Angelo Katsoras

Right?

Mark Noble

Yeah, of course.

Angelo Katsoras

They lock it up. So it's different times and more of a higher cost associated with a lower trust economy, and I think we have to take that into consideration.

Mark Noble

Now, when we talked on an iteration of this topic a year ago, you highlighted the number of growing divides between China and the United States, and not just limited to the semiconductor servicing. Since that time, how do you think the relationship has fared? Do you think things are getting more tenuous or do you think some of these policies are just more performative than actual substantive changes in that relationship?

Angelo Katsoras

Well, even before the recent spike in tensions, it's important to note that China and the United States, they had separate Internet systems, separate payment systems, separate GPS systems, and separate 5G systems now. And since the invasion of Ukraine and Pelosi's visit to Taiwan, both sides are now more convinced than ever they have to become less reliant on each other in key industries. From China's perspective, they saw the sanctions put in place in Russia, the freezing of the financial reserves, "That could happen to us one day," they're thinking. From America's perspective, if tensions spike, what will they do if they deny us access to rare earth minerals or key medicines? So both sides, these events have actually increased their motivation to become less dependent on one another. And if you're a business, it really means you're navigating this tension.

Angelo Katsoras

And sometimes it gets very hard to do, because if you follow American rules you're in violation of Chinese rules and vice versa. And so for me, these tensions that we've seen building up for years have led to the CHIPS Act. And I think now these continuing tensions might lead to legislation called, which was being proposed, it's called the National Critical Capabilities Defense Act, which didn't make it in the last CHIPS Act, which basically would give the US government, if passed, the ability to analyze investments in key sectors abroad in countries of concern, and they could deny companies from making outbound investments. Not just in semiconductors, it could be batteries, for example.

Angelo Katsoras

And this didn't make it in the last act. But I think that the way trends are going, you're going to see a version of this perhaps a year from now. And so this would mean that if a semiconductor wanted to build certain plants, that they'd have to get permission. If Tesla wanted to build a second battery factory, they'd have to get permission. So I think these trends are moving forward. So you'll have the CHIPS 2 Act plus maybe something like this going forward as well.

Mark Noble

But do you get concerned at all about the fact that, we look at something like electric vehicles, so you have the Biden administration put forward an executive order that electric vehicle increase should be X amount by 2030. Some people think that we could have one in three cars on the road as electric. We see even this week Dodge, Chrysler getting rid of their Challenger and Chargers and replacing them with electric vehicles.

But the components for those vehicles, they're comprised of a lot of those rare earth metals, including lithium, that you've highlighted for the batteries. And a lot of the manufacturing of those components is done in east Asia. You're asking to warp speed a trend by 2030 which probably requires decades of infrastructure investment to onshore that. I just don't understand where, security issues aside, I just don't see where there's any realistic situation where you can put 80% of EV manufacturing in North America when all the components and resources are outside of North America.

Angelo Katsoras

Well, this is the great dilemma. You've mentioned it, because China controls the rare earth minerals, but more importantly, the refining, the refining of cobalt, the refining of lithium, the refining of nickel. And so you have this, and building refineries in North America takes many years, if not a decade or so to get the permission and the approval. So it's this big dilemma, that if you really want to try to even put as much effort to meet your targets as possible, you're going to go from being independent in oil and natural gas to being dependent on supply chains based largely in China. But if you delay your targets in order to give your supply chains here to have a bit of a critical mass in terms of dealing with this, you'll miss your targets by an even wider margin.

Angelo Katsoras

So it's a dilemma. And the challenge in North America is that many people in the West and North America, Europe in particular, especially the younger generation, we've equated mining with environmental degradation. And now we're turning around telling them we need the mines for the semiconductors and to advance the green revolution. So it's this inherent contradiction, right? So it's something that we're going to have to explain to get the public acceptance involved in it. But this will take a very long time. On average getting a copper mine up and running, according to the International Energy Agencies the average is 16 years from when you discover it, get your regulatory approval, and you get it up and running. So this is something that you cannot meet, even come close to meeting these targets without increasing your dependence. And the US is already at a point where they need to rely on China for the refined rare earth minerals. They need to put in their warships in order to face China in the South China Sea. It's not a good position to be in when you're dealing with your geopolitical rival, for example.

Mark Noble

Well, and to your point, forget a mine, just even refining lithium, it's all done in Asia. And setting up that infrastructure could take forever. So it's interesting. And it really segues into my next question, which is related to Taiwan. We've actually seen on the investment portfolio, for example, with our global semiconductor index, which has both US names and large Asian names such as Taiwan Semiconductor, but Taiwan Semiconductor trades at a much bigger discount relative to Nvidia, even though it has, I think, 90% of the advanced foundry business in the world. And I think a lot of that is due to the geopolitical tensions around Taiwan. Investors are simply avoiding certain geopolitical areas because of the inherent risk. Do you think that this US CHIPS Act potentially heightens geopolitical tensions around Taiwan? Aside from the Pelosi situation... Where a company resides, do you think there's an investment impact now because they become politically sensitive areas?

Angelo Katsoras

I think in our last podcast with regard to TSMC I mentioned that they would have to, in order to navigate this divide they'd have to build a separate supply chain for China with no US components, separate supply chain for US, no Chinese components. But now that's not good enough because the US is basically saying, "If you want to have access to our market, if you want to have the access to subsidies, you cannot produce advanced semiconductors within China." And I think, if my memory serves me correctly, Taiwan also has something similar saying, "We're not allowing you to produce the most advanced versions of chips within China as well." Now, China's not going to be happy with this, because like the US they're pressuring Taiwan to build these chips within China as well. But for the moment they can't do much because they get all of their chips from there. And perhaps as TSMC builds more factories abroad, this discount you mentioned might decline. But you also make Taiwan more vulnerable, right?

Mark Noble

Correct, yeah.

Angelo Katsoras

As I mentioned, one of the biggest protections Taiwan has is that if China was to begin hostilities and disrupted the cycle of high end chips, it would be a real impact on their economy, which already has challenges in real estate and other areas. But if China was ever to develop these chips and produce them at home at a higher level, then that's one less barrier to think about if you're thinking about initiating hostilities. But I think TSMC is going to have to put a lot of money now abroad in building areas where, building up all this infrastructure from scratch is going to cost a lot of money, just to build all that ecosystem that took decades and decades to build. That'll be more cost for them, but that will be partially offset by the subsidies they're going to be able to get from every region that they go to, whether it's Japan, Europe, or the United States, for example.

Mark Noble

Yeah. And you raise a good point. Does it escalate, though, the geopolitical tensions? Because we see TSMC, for example, is going to build a \$12 billion facility in Arizona. And then back to your point about, \$52 billion might seem like a lot, but each of these plants is like \$10 to \$20 billion to build. But by doing that, then it becomes a direct affront to China because China's now seeing that, okay, well, if TSMC moves all of its critical manufacturing to a US supply chain, then they're effectively moving that supply chain out of east Asia, which is their scope of security concern. So does it actually expedite tension in Taiwan for them to want to actually ensure that there's not offshoring from Taiwan, that that stays in that key economic region for them?

Angelo Katsoras

I think it puts pressure on China to even put more money into trying to develop a capability in the higher end sphere, which they haven't succeeded in doing thus far. They've even gone to lengths of trying to poach semiconductor engineers from Taiwan, and Taiwan has outlawed it. There's been reports that people involved in this industry in China been arrested for corruption, but there's also been reports within those reports saying that some of these guys are just being arrested because China's disappointed they haven't made the progress necessary. Recently the Minister of Industry was arrested for corruption in China. So I think if anything it'll heighten the motivation or the money that China's going to throw into it. Because there's not much they can do to stop the Taiwanese company from building plants in Japan, Europe, or United States, but it'll heighten their own need to develop their own capacity within China, a heightened sense of urgency.

Mark Noble

And just as a final piece, we've talked a lot about US and China, but what about the rest of the world? This is the other part that I think that we're missing, is that it looks like different regions want to be able to champion particularly the semiconductor business, like Netherlands based ASML. Do you expect there to also be a further geopolitical arms race coming from places like Russia, Europe, which also just throws more money and more stimulus into this particular network of sectors?

Angelo Katsoras

I think so. I think you're going to see an arms race of financing. And with regard to ASML, the company based in Netherlands that makes those high end chips, they were pressured by the United States not to sell the most highest end version to China. And now they're pressuring them to go lower down the technology scale, older equipment. And you could see these pressures going to Japan or South Korea for the components that they make, and the US has proposed something called a chip alliance where Taiwan, South Korea, and the US align their supply chains while excluding China, as an example. And then it presents an opportunity for, Canada, which is being excluded from the semiconductor supply chain, and this rejigging of the supply chain along geopolitical fault lines is a potential opportunity.

Angelo Katsoras

I think the best way for Canada to go into it is to mine some of the minerals needed for this and to refine them. But the question for social acceptance comes into play. And I also think it's important when you look at these tensions, I forgot to mention earlier is that it is a double-edged sword for the western semiconductor manufacturers and related players in the industries, because they do get a significant percentage of their revenues from China, about 30% or so. And this will be made up for by perhaps getting more access to the Western market and having less competitors from China, for example, and the subsidies that'll come with it.

Angelo Katsoras

I think part of the behind the scenes negotiation for the CHIPS Act was that the chip companies were telling United States and Europe, "If you guys don't want us to sell our most high-end versions to China and we're going to lose access, you have to make up for it somehow." So the CHIPS Act was that type of, at least to compensate for this major loss of revenue that they would have lost. So that's the way you look at it, where there's this potential loss of market share, but being gained by an increased market share within the west and more subsidies as well.

Mark Noble

Well, and it highlights too that these are two crucial markets. Basically I think you'll probably have to look at this type of investing as not just North America, but looking at the opportunity in Asia and the opportunity in North America. Because clearly those industries are going to have to reorient for those two key consumer bases. 50% of the world's consumers are going to be in Asia, including India and China, over the next two decades. And so if you're going to cut off that market, who's going to fill that gap?

Angelo Katsoras

That's it. Right, and the companies in key sectors, they're going to have to make a choice. Do you focus on China or do you focus on the US? And then you see more of this moving to India, for example, and things like this, make it such an important player. So that's why, for example, if you see India infringing sanctions and not really following sanctions on Russia with no reaction from the US, is they're just too important. You need them as a counterbalance to China so you really can't do anything. So these other countries become very important as potential new areas to set up your manufacturing operation and potential new markets as well. But you're right, I think you're in this situation where the more advanced the sector, the more you're going to have the difficulty of being able to have access to both markets. You might have to choose which one you're going to be able to focus on.

Angelo Katsoras

And that's going to be more and more difficult, and countries are going to have to make that choice as well. I always mention when the CFO of Huawei was arrested in Canada, Canada had to make a tough decision. Do you piss off the world power you do 70% of your trade with, or do you anger the world power you do about 15% of your world trade with? So you had to make a dirty choice, for example, which went to anger. So every country, and if it was the same situation in a country near China, they would probably lean toward China given the trade ties.

Mark Noble

Well, I think from an investor perspective it just highlights the old goal, which is diversification. Whereas you look at these global industries, you're probably going to have to actually take a harder look at your portfolio and see where you have exposure to and understand that drivers of growth are probably coming from both and they're going to come from different companies, which again just highlights a global need for your investment.

Angelo Katsoras

No, you're right. You're right.

Mark Noble

Well, thank you so much as always, we love having you on this. I think you're probably our most favorite guest.

Angelo Katsoras

Thank you very much.

Mark Noble

And we do have a number of ETFs at Horizons ETFs that provide exposure to some of these themes, that we are not providing any investment advice for you to go and pick those up. That was not the point of this. Angelo's completely here as an objective geopolitical analyst, but there are ETFs such as the Horizons Global Lithium Producers Index ETF and the Horizons Global Semiconductor Index ETF, which do provide exposure to some of these themes. So there's a tie-through in terms of some of these ideas, but do want to highlight that this is an educational conversation about what's happening in the geopolitical market and not an advertisement for our ETFs.

Mark Noble

But it'll be really interesting to see over the next little while how these tensions continue to bring about a big shift into these transformative technologies. And as we move forward on these transformative technologies, keeping mind the geopolitical aspect will probably take on a much bigger role in terms of factoring in how global governments could impact earnings and how they could impact the forward prospects for these companies. So thank you again, everyone, for being here. And again, thank you, Angelo.

Angelo Katsoras

You're welcome. It was my pleasure.



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