

3RD HARVARD KOREAN SECURITY SUMMIT:  
“KOREA – A CATALYST OF GLOBAL TRENDS”  
BUILDING MUTUAL PROSPERITY THROUGH  
RESILIENT TECHNOLOGY SUPPLY CHAINS  
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**DR. JOHN PARK:** Welcome to Day 2 of the 3<sup>rd</sup> Harvard Korean Security Summit. My name is John Park, Director of the Korea Project at the Harvard Kennedy School's Belfer Center for Science and International Affairs. During day 1, our stellar panel speakers examined ways to enhance security on the Korean Peninsula. My thanks again to ROK Foreign Minister Dr. Park Jin, KF President Dr. Geun Lee, and Natalie Colbert, for their excellent speeches.

For day 2, we'll be focusing on “Building Mutual Prosperity Through Resilient Technology Supply Chains.” For our day 2 keynote remarks, it's my pleasure to introduce Tami Overby. Tami is President of Asia Pathfinders, a boutique consulting firm specializing in US-Asia economic affairs. Most recently, she spent over four years as Senior Director with McLarty Associates, where she advised clients on Asia and trade matters, with a particular focus on Korea. Tami has over three decades of experience leading Asia work, including 21 years living and working in Seoul. She previously served as President of the US-Korea Business Council. Tami has an extensive track record, helping American companies compete and prosper in Asia. Thanks so much for joining today, Tami. Over to you.

**TAMI OVERBY:** And thank you to the Harvard Kennedy Center for inviting me to offer some framing comments. The US-Korea economic relationship has evolved significantly over the last few years. When I first moved to Seoul in 1988, American companies complained that Korea was one of the hardest places in Asia to do business. When I left Korea 21 years later, to move to DC, to run the US Chambers Asia Program, American companies were then saying Korea was one of the best places in Asia to do business.

One of the principal reasons for this change was the US-Korea Free Trade Agreement, or the KORUS FTA. It's interesting to note that the US only has three free trade agreements in Asia. We have one with Singapore, Australia, and in 2012, the KORUS FTA entered into force. We just celebrated the 10<sup>th</sup> anniversary of that agreement. And, in spite of what a former President

said, the numbers and the American companies doing business with Korea make it very clear that this is a very successful trade agreement.

According to US Trade Representative Tai, over the last decade, the value of goods and services the US has exported to Korea has grown over 17 percent, to nearly \$70 billion dollars. Last year, US agriculture exports reached \$9.4 billion dollars, a record amount that has increased nearly 35 percent during the decade of the KORUS Free Trade Agreement. In addition, last year, Korea became the number one importer of the US beef, both by volume, and value.

In addition to the normal role of a free trade agreement to resolve trade irritants, our governments last year agreed to expand the KORUS FTA to include future oriented issues, such as supply chain challenges, emerging technologies, digital ecosystem and trade facilitation, with the intention of deepening cooperation to enable common approaches in responses to challenges facing global trade.

In 2010, when the US was leading TPP, or the Trans-Pacific Partnership, a comprehensive, high-standard trade agreement, Korea was invited to join. But at that time, the Koreans were suffering from FTA fatigue, after just having completed both the EU-Korea FTA, and the KORUS FTA. By 2013, Korean officials had changed their minds, and were seeking to join the agreement. But the US felt the negotiations had moved too far to add a new negotiating partner, especially after just adding Japan.

In addition, I think the Koreans at that time didn't believe Japan was serious about trade negotiations, and expected them to slow down the agreement and lower the ambition, making it unlikely, in many people's view, that the agreement would actually come to fruition. They, along with many in Washington, misjudged Japan's participation. They missed the cues that Japan, under Prime Minister Abe, was changing. It turned out that Japan's participation was very helpful to the United States, as we were no longer the sole demandeur. With Japan at the table, they

often had market access to offer, as a sweetener to encourage the other countries to do the difficult things we were asking them to do.

Then, on day three of President Trump's administration, without any review, he withdrew the United States from the TPP agreement, in what I believe will go down in history as one of the biggest strategic economic mistakes of my lifetime. Fortunately, Japan and the other 11 signatories completed the deal, now known as the Comprehensive and Progressive Trans-Pacific Partnership, it entered into force December 30<sup>th</sup>, 2018. Korea has expressed interest in joining, although they already have FTAs with most of the CPTPP members, they don't have one with Japan. And this would be significant.

Korea is a member of RCEP, the Regional Comprehensive Economic Partnership, which is the world's largest trade agreement, and includes 15 Asian countries. Three key points about RCEP, although it is considered a lower standard agreement than CPTPP, one, the Trade Ministers of all 15 countries meet together at least once a year to talk about facilitating more intra-Asia trade. Two, a single rule of origin, meaning if one can export a product to one country, one can export it to all 15 with the same piece of paper. And then lastly, China, Japan, and Korea are all members. And this is expected to create more trade between these three Northeast Asian countries.

Then, on May 23<sup>rd</sup>, President Biden launched the Indo-Pacific Economic Framework, or IPEF, with 13 other initial countries, including South Korea. Together, these countries represent 40 percent of global GDP. IPEF includes four pillars, fair trade, supply chain resilience, clean energy, and tax and anti-corruption. USTR will lead the trade pillar while Commerce Department will lead the other three. South Korea has already agreed to join all four pillars, and very much hopes this framework will be inclusive, and that other countries, who are able to meet the agreed-upon principles, will be able to join at an appropriate time. However, each of the 14 IPEF participants is not expected to sign up to all four pillars.

The draft joint statement from last week's Ministerial in Singapore on the trade pillar, was leaked to the press, and shows only broad trade commitments. The next Ministerial appears to have been set for next week. So to recap, today, the 14 countries participating have only agreed to a scoping exercise. And it's believed that the final agreement will be a la carte, allowing countries to pick and choose which pillars they want to join. In addition, the full agreement is not expected to have full dispute settlement mechanisms, or to be fully legally binding.

So it's difficult to see how Commerce Secretary Raimondo's prediction that IPEF will be more robust than a free trade agreement will be accurate. But it is hugely politically significant that the US is reengaging with Asia. The quad. The quad is a security dialogue between Australia, India, Japan, and the US. While Korea has not been invited, and probably wouldn't want to join, President Yoon has indicated he would consider having Korea join some of the working groups under the quad.

Then we shift to the Mineral Security Partnership. South Korea was one of the 11 founding members of the US-led Mineral Security Partnership or MSP, which was just formed on June 30<sup>th</sup>, 2022, and made up of countries that are committed to responsible critical mineral supply chains to support economic prosperity and climate objectives. Members include Australia, Canada, the UK, France, and Germany, along with others, in addition to Japan and South Korea. It's interesting to note that China and Russia, two of the world's largest mineral exporters, were not invited to join.

And then we have the CHIP 4 or FAB 4, a US-led semiconductor chain alliance—supply chain alliance. The US began talking to potential partners about this new initiative last March, to discuss ways to strengthen cooperation on semiconductors. As part of economic security, many countries have been reviewing their critical supply chains to ensure resilience in a very challenging world. Japan and Taiwan have already indicated interest in this new collaboration.

South Korea has been asked to make a decision, by late August, as the working level discussions are expected to begin then.

Only today, South Korea's ICT Minister Lee expressed concern and suggested Korea must very carefully review this decision over the very real concern of China's possible economic coercion. I'm sure everyone remembers the economic retaliation over Korea's decision to support THAAD in 2017. The US is a leading player in the most advanced chips, while Japan takes the lead in supplying key materials and equipment. And then Korea and Taiwan are both semiconductor manufacturing giants. Since both Korea's major semiconductor companies, Samsung and SK Hynix operate fab plants in China, and are major suppliers of chips to China, it is thought that these challenges can be mitigated, but they will need to be very carefully managed.

And finally, in closing, I want to posit that the framing language of these new initiatives is very important. Let me share with you the comments from two key leaders in Asia regarding these new efforts. Some in the Biden administration initially framed some of these initiatives as democracies versus autocracies. But Singapore Prime Minister Lee cautioned the US, and encouraged us instead to frame them as rules-based coalitions versus those who flout the rules, or cheaters, basically. Prime Minister Han Duck-soo said he hoped IPEF would be an inclusive agreement, and one that other countries would be able to join when they were able to and willing to meet the principles in due course. I hope this provided you all with a framework for what I know is going to be a very lively conversation. Thanks. And back to you, John.

**DR. JOHN PARK:** Tami, thanks so much for setting the stage for our discussion. Really appreciate that. Before turning to Panel 2, I ask our speakers to remain muted with their videos on. Dr. Francesca Giovannini, Executive Director of the Managing the Atom Project at the Belfer Center will be moderating Panel 2 and introducing our speakers shortly. Dr. Giovannini previously served as Strategy and Policy Officer to the Executive Secretary of the Comprehensive Nuclear Test Ban Treaty Organization in Vienna. Prior to that, she was Director

of the Research Program in Global Security and International Affairs of the American Academy of Arts and Sciences. She holds a Doctorate from the University of Oxford. Thank you so much for joining us today. Over to you, Dr. Giovannini.

**FRANCESCA GIOVANNINI:** Thank you so much, John. And good evening, good afternoon, or good morning to all of you joining us today. I know there is a lot of interest in this panel, and rightly so. I have to begin by saying that this annual Harvard Korean Security Summit has really become a landmark event for the Belfer Center, and is acquiring prominence and centrality in a time where competition among great powers, and also the dialogue between the East and the West is getting more and more fragmented.

So I really want to congratulate Dr. Park and his team for putting together something that is pretty extraordinary, and really is helping to forge a real dialogue across continent. So thank you so much, John, for all your work.

John has asked me to moderate this panel. And I have to say, I'm a little bit outside of my comfort zone, because in normal times, I would have led, you know, discussions about nuclear issues. But technology today is clearly taking over. And I have to say, for lay persons like myself, you know, approaching and looking at the supply chain issues we are having in a post-COVID world, the impression is that there is no global supply chain. And the supply chain that we have is incredibly vulnerable and catastrophically so.

And so, I am really honored to have the chance to moderate this panel today, and really to listen and learn from great experts who might offer us some very important insights. When we talk about technology supply chain, I believe we are talking about a phenomenon that really cuts across international security concerns and geopolitical and economic concerns. So it is a really important issue that cut across so many domains and so many sectors.

So, without further adieu, let me introduce the panelists. And then we'll get into a conversation. I have five or six questions that I want to pose to the panelists. And then we'll open up for Q and A. and I really invite you all to bring your best questions to the floor. And we'll try to address them in a very lively debate.

So the panel today is composed by really, an extraordinary amount of talent and expertise. The panel features the Honorable Dr. Taeho Bark. Doesn't need any introduction, but just let me mention that Dr. Bark is former South Korea Minister of Trade and is currently the President of the Lee & Ko Global Commerce Institute. Now the Belfer Center and the Korea Project, this year, is also fortunate to count Dr. Bark as a senior visiting scholar for the year. And we are absolutely delighted to count on your expertise and your talent.

Second is Ambassador Mark Lippert. Again, doesn't need any introduction. Ambassador Lippert, right now, is Executive Vice-President, Head of US Public Affairs, and Chief Risk Officer of Samsung Electronics. And he was former US Ambassador to the Republic of Korea. Third panelist is Damien Ma, Managing Director of MacroPolo at the Paulson Institute. And finally, last but not least, Naomi Wilson, who is the Vice-President of Policy Asia at the Information Technology Industry Council. So welcome everyone. And thank you so much for joining us today.

Now I really want to start with just very broad question, which is a rather complex one. What are, in your view, the things that we have underestimated, or maybe overestimated, about investments by South Korean conglomerates in the United States? Dr. Park, if I can start with you?

**DR. TAEHO BARK:** Well, thank you very much for your kind introduction. This is like six o'clock in the morning. I'm not really clear in thinking. But in any case, you saw, you know, many news coming out these days. Korean companies, including Samsung Electronics, LG, SK,

or Hyundai Motor Companies are investing in the United States. Total amount sometimes, we saw the report, is rising up to \$40 billion dollars. And this number is changing, because all the companies are changing their plan.

But, so, you know, I'm sure—I'm a kind of trade economist by training. Korean—For example, Korean semiconductor companies, Samsung Electronics or Hynix, they invest in the United States, it's good for the US economy, as you know. They can create more jobs in the United States, and secure a stable supply of semiconductor. And also, maybe out-compete China and so on. It is also good for Korean companies, because they can have access to the US market, which is most advanced and largest market in the world.

However, there are some kind of concerns, okay. The price of semiconductor, supplied by the Korean firms in the United States, could be higher than price before, when they export from Korea or other countries to United States. And also, the US is providing quite a large amount of financial support by tax exemption or some incentives to induce Korean companies to invest in the United States, maybe that kind of money could be used for US workers in other sectors of industries.

There are also some concerns to Korean companies who are investing in the United States. It's not all the concern, but there are some concern they may face difficulties to find sometimes qualified workers with the proper skills in the United States. I think we have some cases in the past. Also, they may have additional difficulties due to a lack of infrastructure of supplying electricity, and even industrial water.

They also have to find new markets to sell semiconductor they used to export to the United States. While they are not allowed to export some of the semiconductor to China. So they have to find new market to sell. Furthermore, they may find it difficult to secure stable supply or parts

components and the key materials they used to import from China. So it all depends on the relationship between Korea and China, after all.

Finally, these major conglomerates of Korean companies may feel some pressure from the Korean people, and particularly domestic sector, domestic workers. They may argue that they should see more investment in Korea, rather than overseas investment. I will stop here. Thank you very much. Yeah.

**FRANCESCA GIOVANNINI:** Terrific. Thank you so much. Excellent, excellent point. We'll pick up on some of your comments in the following questions. Ambassador Lippert, what is your impression of what we have underestimated or overestimated?

**AMBASSADOR MARK LIPPERT:** Thanks. And great honor to be here. And I would just say thanks to the Belfer Center, thanks to Harvard, thanks to Dr. Park. And let me just say, at the outset, I'm speaking on behalf of myself as a private citizen, because some of these questions clearly stray into areas well beyond the writ of Samsung, and I don't want to inadvertently suggest a view for a broader area of questions.

All right. To answer your question, I'll answer—I'll really take your question literally, underestimate or overestimate. And I think the thing we underestimate about this investment is that it builds on what Tami, Ms. Overby outlined in her opening remarks, a strong, steady, multifaceted relationship between the Republic of Korea and the United States, that has grown and matured over time. And not to recap the whole arc of the relationship, but principally it was a security relationship for decades.

Then you added the KORUS FTA free trade agreement, it's a second pillar. Now you're adding [KOREAN], right. You're adding economic security, in addition to a very strong and growing people to people cultural relationship. So I think what is lost here is often is that there is a narrow

focus on the investment piece, which is a very important thing. And that's why we're here. But it's the cumulative impact on the overall relationship, the maturation of the partnership, and the resiliency it's bringing across a number of facets. Let me say that on the underestimate.

You know, on the overestimate, I would say, perhaps it's a little bit of an underestimate too. So it depends on which side you look at. There is so much focus on the Korean investments here, we're forgetting about what President Yoon outlined in his address at the Samsung Pyeongtaek site. There's now FDI flowing back into Korea from the United States. And I think we often under—or we overestimate or over-evaluate or over-analyze the Korean flows, and aren't looking at the US flows, which I think is quite an interesting phenomenon, too.

And let me just get off the stage by saying, I think more US companies are interested in Korea. I have felt that for a long time. There is a very viable, highly skilled workforce. The location and the infrastructure is fantastic. So I can't tell you how many small, medium, and even large companies come to me and express an interest which dovetails with Tami's comments about the arc of the ease of investment into Korea. Then that's changing as well. So let me just stop there, and again, thanks for the question.

**FRANCESCA GIOVANNINI:** Thank you so much, Ambassador. I really appreciate, also, you bringing in this question of the culture, right, and the soft diplomacy aspect, which I think is extremely important in solidifying relationships. Damien.

**DAMIEN MA:** Well, thank you. And it's terrific to be on this panel with such distinguished experts. I guess to answer your question more directly, in terms of FDI, what we're overestimating and underestimating, since I tend to come—I tend to be the one that comes from more of an economic market commercial perspective, I think we overestimate the extent to which political arguments is persuasive, sufficiently persuasive for continued flows of FDI. Because, at the end of the day, companies are companies. And to kind of piggyback off of, you

know, Dr. Barks, there are a lot of commercial reasons where, you know, whether it's Korean, Japanese, or even Chinese, that that can make it a little bit more difficult, things like the CHIP Act being caught up in Congress, right. That's been a big deal, the \$52 billion dollars. So I think we need to think a little bit more about what are the commercial reasons? What are the market reasons that people—that foreign investors will want to invest in the United States, including things into high tech supply chain?

And what we're underestimating in, you know, I'm here in Chicago. I think I'm one of the few that's not inside the Beltway. People tend to often forget, investments happen in the states, in local government, you know, sub-national is extremely important. Especially when you talk about a country like South Korea, where you know, obviously, the auto sector, EVs is going to be a big deal. And that's really predominantly the Midwest, and plus a little bit of the Sun Belt.

And there's a very different political dynamics at the local level, incentives. Some states are union, pro-union states. Some are not. Foreign investors tend to kind of lump the United States together. So there are many ways in which you have to distinguish between where you do your investment, because foreign investment is ultimately about location. And so there is, you know, you can kind of think about the policy environment in DC. But, at the end of the day, where do you place your plant? It's either going to be in Georgia, or it's going to be in Michigan, or Ohio, right.

And also, to Dr. Bark's point, one of the challenges is that we're asking, you know, companies like Samsung or Hyundai and others, to come in and invest. But we don't have an EV supply chain here. We simply don't. That's a reality. We're building it from scratch, you know. China has one. We don't have one yet. And so there is going to be some challenges here, in terms of, you know, how we actually make that happen, and how fast and how quickly FDI can be part of that solution. So that will be my sort of way of explaining overestimating and underestimating.

**FRANCESCA GIOVANNINI:** Thank you very much. Super interesting. I have a follow-up question after I'll raise. Naomi.

**NAOMI WILSON:** Thank you. And it's great to be with you all this morning and evening respectively. Really looking forward to this discussion. On the overestimate/underestimate question, I'll just add that I think there's an underestimate of how long it takes to really establish a presence in a different geography. New fabs cost billions of dollars to establish. And, as Dr. Bark alluded to, there is also a need to have infrastructure in terms of skilled employees and labor ready to go.

So we're really talking about a long-term plan here. And you know, americans don't tend to think in the long term. So I know we're all very focused on the CHIPS Act, and getting it funded, which, you know, ITI absolutely wants to see. And it's a really important first step. But I think policymakers, and we all need to keep in mind that this is a long game. And it's going to take years to establish these types of facilities. And also, that the US is competing with other geographies to offer incentives. We're not the only ones that want to attract Korean companies. And, to Damien's point, companies are competing against each other. And they're going to be looking at the best deal that they can get, too.

**FRANCESCA GIOVANNINI:** Fantastic. I have a follow-up question to all of you. You have pointed out some really interesting concerns. Dr. Bark, you said South Korean companies are concerned about the lack of infrastructure, even to find industrial water or electricity. There is a lot of pressure to invest nationally, domestically, which makes perfect sense. Damien, you pointed out, for example, the question of local cultures, right. States that behave differently, and understand maybe market and free trade very differently. And Naomi, you suggested also this idea of timing, and an infrastructure that is still in development.

So I wonder, could you give us a sense of how much you think the South Korean companies, that now look at the American market, fully understand these major deficits from the outside? Dr. Bark, if I can start with you.

**DR. TAEHO BARK:** Yes. I think these days, like our Ambassador Mark Lippert, the company has a lot of experts inside their companies, who understand, you know, the situation about the investment environment in the United States. For example, even though I show these general kind of concerns, but Hyundai Motor Company just decided to establish a kind of research lab about the new mobility, EV vehicles, things like – in Montana. Why Montana? Because they are looking for many other places. But Montana has a good university, which is pretty big. And they are producing annually high quality of workers in Montana. And also, they have a lot of facilities to test vehicles and other things like that.

So I'm sure these are the concerns. But our much national companies, global companies, are very good at getting information about the situation. So you know, even though I raised general concerns, but the companies you are mentioning, I don't think that they have a big problem.

**FRANCESCA GIOVANNINI:** Ambassador Lippert, what do you say about how the dialogue, and also the understanding of some of these concerns?

**AMBASSADOR MARK LIPPERT:** Yeah, just in terms of the question on knowing the US market being here, look. I can't speak for Samsung here. And I would completely agree with Minister Bark in that. I think there is a lot of expertise, present company excluded, of course. Kidding. But Samsung has been in the US for 40 years. We have 20,000 employees. We opened a Washington, DC office, I think, seven-eight years ago. And we're in a multitude of states, in both sales and marketing, research elements, manufacturing, Texas, South Carolina, Minnesota, Silicon Valley, New York, New Jersey area. I mean it's a diverse array. And, of course,

Washington. So I think the sophistication and ability of a company like Samsung to gather information and make assessments is extant.

And I would also say, and I'm not speaking for them, but just as an observer, other Korean companies are also in similar situations. We have long seen manufacturing facilities from some of the-- Hyundai Kia in Alabama, Georgia. There's Washington offices here. There's headquarters all over the place. So I would just say, I think it's a quite sophisticated array of actors on the American scene that have been here for, you know, a relatively long period of time. And I'll stop there.

**FRANCESCA GIOVANNINI:** Damien, could you give us an insight and an idea of how much actually this—you made the statement that, you know, maybe the perception is the United States, the uniform entity, right. But there are major differences, culturally, across states. So how much do you think these differences are understood?

**DAMIEN MA:** I don't know if I can speak for Korean companies understanding, because I don't work for a Korean company. But we've done a number of case studies, you know, for investment, including Chinese and foreign investment, obviously. And I'm not really specifically speaking about cultural differences, but just the fact that, you know, certain states, certain sort of legacy auto states have stronger unions. So that automatically puts companies into sort of union politics, which some foreign investors are not accustomed to, and don't necessarily want to deal with. And so that's why you're seeing, I think, including Japanese investors, there has been more manufacturing investment in so-called Sun Belt states, because they don't have—they have less of those kinds of local politics.

So there is sort of – you know, so you have to kind of go across, and then obviously, when it comes to clean energy, I don't know as much about chips. But in terms of EVs, you know, there are different consumer subsidies. There are different mandates. California is very different than,

say, Mississippi, right. And so all those regional differences is important, obviously, in thinking about where you want to physically place your plant.

And I guess the broader point I'll make, too, is that I think part of it—and I would assume this applies to Korean investors too—is, you know, having the policy certainty in the United States, for example, we don't necessarily have a sort of—well, we may have an EV mandate for 2030, for example. If you're Hyundai, generally, you're making a plant because you're trying to sell to americans. And you would have to assume that out to 2030, there is enough policy certainty that other people are going to want EVs, that the demand is going to be there. Or else, why would you drop a five to ten year investment in the United States? So the macro policy uncertainty about how much are we going to adopt electric vehicles, is a really important, really important thing to think about, for you know, demand reasons.

**FRANCESCA GIOVANNINI:** Great. I actually want to connect then to you, now, Naomi. You said, you know, the US is not the only game in town. I mean, there are different geographies of competition. And you know, maybe some other places think more long-term or provide more of a long-term policy view that the United States is able to provide. How much do you think this is impacting the way in which maybe the South Korean companies think about investments?

**NAOMI WILSON:** Well, it's definitely a big part of the picture. You know, the US is absolutely not the first to think about incentivizing manufacturing in country. In many respects, we're kind of late to the game. Especially in East Asia, the incentives are pretty well known in Taiwan and Korea, as well as China. And we're talking about not only funding, but grants, land grants, tax breaks, things of that nature.

So when a company is assessing where to build a plant, they consider all of the things that the panelists have just covered. And the incentives are one of them. I do agree with Damien, the

policy environment, the stability of the policy environment is very important. And that does bode well for the US. But there are many, many different considerations.

**FRANCESCA GIOVANNINI:** Thank you very much. I wanted to move now into this famous question about the supply chain for microchips, and just ask all of you the question about how much this recent development, for example, the Samsung announcement that they have begun mass production of advanced three nanometer microchips, could in fact really help boosting the supply chain resilience in this domain. Dr. Bark, can I start with you? And then I will shift the order of speakers. But Dr. Bark, let me start with you on this one.

**DR. TAEHO BARK:** Well, thank you very much. Actually, I'm not an expert on this technology stuff. But I also saw the news that the Samsung is now producing a very advanced, you know, the microchips. So I think this is good news for Samsung Electronics, because it can enhance its technological standing in the, you know, in the semiconductor community. And especially it can enhance its competitiveness, compared to Chinese semiconductor manufacturing companies And even maybe it can be competing aggressively with the Taiwanese TSMC.

If Samsung Electronics succeed in mass production of advanced microchips, it may improve certainly the semiconductor world market environment which has been too much dominated by TSMC. In other words, more than sometimes, you know, close to 60 percent of the semiconductors are supplied by TSMC. And Samsung is taking less than 20 percent. So they need some more flexibility.

So, you know, just maybe supply sources of semiconductor could be diversified, not in terms of number of companies, but in terms of amount of supply. So I think it certainly helped bolster supply chain resilience for US companies, which are using semiconductor these days.

Particularly, if you remember, this will contribute to avoiding so-called supply bottlenecks of

semiconductor. We had recently experienced, you know, in the couple of years, which had a huge impact on even the automobile production worldwide. So maybe Samsung's role or contribution to increase these kind of microchips maybe can enhance the free smooth flow of supply chain to semiconductor users, especially in the United States. I will stop here.

**FRANCESCA GIOVANNINI:** Ambassador Lippert, I want to ask you a different question. Instead of commenting on what Samsung has done, I wanted to ask you whether you can give us a sense of what are the concerns for you, when you look at a supply chain of microchips? What, in your view, are the greatest vulnerabilities that we are still unable to address today?

**AMBASSADOR MARK LIPPERT:** I mean, it's a really good question. And I think first, let me just say, part of the process here is identifying which parts of the supply chain you want to locate close to the customer, to build resiliency, et cetera, et cetera. Because I think the Semiconductor Association of America—or SAI, the acronym—I'll chose the acronym—I'm tired. It's late. It's not early. So SAI, or SIA, I'm sorry, rather. You know, I think did a study that talked about, if you relocate the whole supply chain, it's trillions of dollars, right. It's just economically unfeasible, or infeasible.

So I think one part is identification of which nodes where, and commercial viability. And the second point I would make is, just the demand, right. I mean, let's just look at how demand will add to the complexities of the supply chain issue. The same organization put out a study that said demand will be increased by 56 percent by 2030, right. So, in addition to the complexities, you've got a growing demand.

And I think the final point that I would just make on all of this is then, it's the—just to come back to the stability of the policymaking environment, right. Because you've got the commercial activities. You've got the nodes and stability of the policymaking environment, I think are really the things that I watch closely as a private observer. And I'll just stop there.

**FRANCESCA GIOVANNINI:** Thank you very much. Damien.

**DAMIEN MA:** On the chip question, so you know, chips are quite diverse, in terms of types. So when you asked about the three nanometer, that's sort of the natural progression. That's the next generation that everyone is chasing after. So it's not just Samsung, TSMC. I'm sure Naomi has thoughts on that too. So this is sort of the natural on progression. You know, I'm speaking to you on my Mac. My Mac has a five nanometer chip that Apple designed. So when you're talking about that kind of chip, it's really increasingly an oligopolistic structure, globally. There are two or three, probably, really honestly, just two.

So Samsung is obviously competing with TSMC. And TSMC has made it clear that they're moving to three. Intel is a little behind. To Naomi's point before, it's like a \$5 billion dollar investment per fab, right. And one of those machines that's required to make advanced chips is the same price as a Boeing 737. So that's the amount of money you got to drop to make those kinds of chips.

And so, at the end of the day, you're really looking at two or three players. You know, it's a bit like the Boeing versus Airbus dynamic in the advanced chip sector, right. So it's not very hard to figure out who is doing what. And because the entry cost is very high. So not many people enter it. And so I think, you know, Samsung can certainly—You know, I think competition against TSMC is generally a good thing, because TSMC is about 65 percent of global market share for advanced chips. So having, you know, diversification is good. But it's hard to see that it becomes a more democratized, you know, because only certain fabrications can—only certain fabs can actually make those kinds of chips, you know.

And the Chinese can make the 14 nanometers, 10. They can make memory chips. Samsung can make memory. But those are not the kind of advanced chips that we're going to need for, say,

autonomous vehicles. So to the extent we believe the future is autonomous vehicles, then we need chips like three nanometers.

**FRANCESCA GIOVANNINI:** Damien, could I pick up on this, precisely from an economic standpoint? So you don't foresee any time soon a sort of nationalization of microchips industry. You're not going to see the Chinese wanting to produce their own chips, the Russians wanting to produce their own chips, because it's becoming so strategic?

**DAMIEN MA:** Oh, they all do. They're all trying. But the Chinese, right now, can't do the five nanometers, you know. And part of that is, you know, I think we've kind of prohibited them from making those chips. Everyone's chasing after five, three, right. Everyone's chasing after it. Everyone wants it. But I think, in terms of who's actually capable, there's like two players that are actually capable.

**FRANCESCA GIOVANNINI:** But is it a question of expertise and know-how? Or is the question of material?

**DAMIEN MA:** Both. You know, like nobody is going to put—It's five—You have \$5 billion, \$10 billion dollars here and there, it's not—it's everything. I mean it's like—Again, it's like why there are only two aircraft makers.

**FRANCESCA GIOVANNINI:** I see.

**DAMIEN MA:** You know, no one else is doing it. It's very hard.

**FRANCESCA GIOVANNINI:** Thank you.

**NAOMI WILSON:** Yeah, just to pick up on that, I mean I think the complexity of the chip supply chain, and the diversity of vendors really can't be overstated. And there's sort of this big picture aspiration from the government side, where yes, you hear a lot of governments saying, “We want to manufacture these types of chips. We want everything done here. We want to be the leader.” And when the rubber meets the road, that's just not how it works. The supply chain will always remain inherently global.

And so what governments really need to do is be more strategic, and figure out the types of chips that they need or want closer to home, or you know, to have an allied partner that they know will continue to manufacture those chips. But just having everything in one spot is not necessarily the best solution. Because, as we saw with the pandemic, you know, there are multiple factors that influence risks and supply chain and destabilize the supply chain. And you can't always predict those, you know, whether they're natural or man-made catastrophes, or geopolitical instability, you know, these are all reasons why the supply chain needs to be diversified.

So any government that professes that they're going to build the next—take the next step, and build everything at home, I mean it's just a lot of posturing at the end of the day, fortunately and unfortunately. And also, I think when we talk about these issues, there's not a lot of digging into the weeds on how companies work together. You know, you have—yes, you have chip manufacturers. But you also have the fabulous chip companies and chip equipment makers. And, you know, who makes what type of silicon, and what type of particles, and things that are way beyond my area of scientific expertise. And these are all, you know, really important. And yes, very few companies in some of these cases can do that type of manufacturing.

So it's important to understand that different companies have their areas of specialization and expertise. And it's the supply chain and, you know, the way that these companies have made their deals and partnerships over years, that have made it efficient and allowed for innovation and growth. And then, governments could help that innovation and growth by incentivizing and

making it easier to build fabs, to find expertise, and to forge trade partnerships with the companies that they want, and to import or export the components that they need.

**DAMIEN MA:** Yeah, just think about it this way. Apple is now a chip company. They're a chip designer. But they don't make—they can't make that chip. You know, TSMC makes that chip for them. But they are a legitimate—they make one of the best chips on the market now, Apple—or design one, anyway, right.

**FRANCESCA GIOVANNINI:** Thank you. I have more questions. But I'll proceed with another one. And Naomi, let me begin with you. This shifts a little bit the conversation from the technology, per se, into more of a geopolitical conversation. And they're talking in Washington, today, left and right, is that we need to decouple from China. So China's decoupling, which very few people understand exactly what that means, in what sectors. How is it going to be done? It's an important part of the political discussion today. And so, from a manufacturing perspective, how can the US decouple from China, and add tech supply chain resilience at the same time? Can it be done without China?

**NAOMI WILSON:** Yeah. So supply chain resilience and decoupling are two different things. Resilience implies a risk-based approach and an awareness of what can destabilize a supply chain. And, as I was just referencing, there are various factors. Geopolitics are one of them. But natural man-made disasters can be another, pandemics as we've seen, and just supply chain disruptions in the form of tariffs, or disagreements between countries.

So the decoupling discussion really needs to go away, frankly. I mean it's just not a productive discussion. There's no need to decouple. It's not beneficial from either a security perspective or a business perspective. Of course, there will always be specialized technology that is sensitive and needs to be protected. And that's where export controls come into play. But you know, the notion that simply selling to the Chinese market, or manufacturing certain parts in the Chinese market,

is an inherent security risk. That needs to be questioned, you know. That's not a risk-based approach.

And policymakers need to be thinking through the ramifications of these decisions, if they're going to try to implement something that's very cut and dry. And that's why it's so important that the private sector and the public sector work together, to understand this whole hugely complex picture, so that government officials can get a better sense of, these are where the risks are. You know, these are where the vulnerabilities are, from a supply chain perspective, from a technology perspective. And this is how we, the company, mitigate against it.

But, you know, China is a huge market. And it's not going away any time soon, as either a market or a hub for manufacturing. And you know, it shouldn't go away. And I think companies have developed strategies where, if there is a concern with a cutting-edge technology, you know, they might use legacy technology that is a couple generations behind. But there is certainly a place for that.

**FRANCESCA GIOVANNINI:** Naomi, can I pick up on one concept? Does the risk-based approach, which I really—I think it's really important, what needs to be done, to make sure that this framework actually becomes part of this narrative, and not the decoupling one, which I agree means very little? So what needs to be done to make sure that we adopt a risk-based approach?

**NAOMI WILSON:** Yeah. Well, I mean, it's a complicated topic. So it's difficult to get people to talk in different ways about it without understanding the nuance. You know, but to kind of—to simplify it, if we're looking specifically at the threat that policymakers see in China, I would say, from a risk approach, which scenario is more likely? Like ask yourself, if you, a company, sell chips to a Chinese company, are they going to be able to successfully reverse-engineer those chips, and put in all the time and resources and expertise that it takes to reverse-engineer, like infinitesimally small piece of high-tech technology? Or is it more likely that any company or

government might potentially bribe an employee to get the expertise directly from someone who knows how to do it? I think the latter is much more likely.

So that's what I mean, in terms of thinking about, you know, the most likely scenarios. How do we guard against that? You know, we've already seen China invest billions upon billions of dollars into chips. And, as Damien said, they're still behind. So to a certain extent, you know, let them spend the money. Let them try to compete. And if they can compete on the merits, great. But you know, so far, their model hasn't worked. And they're still a huge market. They still make some good previous generation type of chips. But I don't think they're a threat at the moment to the global ecosystem in the way that tends to be discussed right now.

**FRANCESCA GIOVANNINI:** Terrific. Thank you very much. Damien, how is your view about this?

**DAMIEN MA:** Oh, decoupling versus resilience? Or just decoupling? [simultaneous conversation] I think I would agree, it's a bit of a vague term. And I'm not quite sure exactly what it means in reality, in the practical sense. You know, I think the way to think about it, I would caution people, when they talk about decoupling, if we're serious about sort of like the most extreme version of it as sort of like just completely severed ties, or whatever you want to call it. That is probably going to be inflationary, if you really just sever ties right away. Any disruption to sort of very integrated ecosystems like that is going to be probably inflationary.

And, in the current environment of, well, we all know what inflation is like now, that is probably not a good outcome. And I think we need to weigh that against how much do we want the clean energy transition to be? Because that's really what we're talking about. You know, things are going to get more expensive because there will be a switching cost for companies. And that cost is going to get passed down. And so we don't really know how that's going to affect inflation or, you know, a cost of number of these inputs that are necessary, for example, to build an EV. You

know, I'm coming back to that, because this is the area where there's a lot of transition happening, you know. And so how expensive do we want that to be? EVs are already about 20-30 percent more expensive than your normal gasoline car. So do we really want to pay another 40 percent extra for those cars? That would slow down that transition.

So that's sort of the implication. So we have to think through, you know, we're talking about supply chain. But we also have to think about the entire supply chain of consequences when we talked about decoupling, right. And I would bet it's going to have a more inflationary effect. And that's probably not—that's just not something I think consumers would want to tolerate in the current environment.

**FRANCESCA GIOVANNINI:** Thank you. Ambassador Lippert, I have the question about the relation between resilience and decoupling. But also, I wanted to ask your view. Naomi talked about, at some point, export control policies can do exactly what we would like to do with China, right. But for some reasons politically, these export control policies don't seem to be sufficient anymore. Could you give a sense of why do you think it's the case?

**AMBASSADOR MARK LIPPERT:** No, it's a really good question. I mean, there's a lot to unpack in this conversation. It's sort of which handle to grab. Let me just try to say first, on your broader question about why there's probably a need to do this, I'm speaking analytically, from someone who works in Washington. I think what you sort of—I think what has happened, is one, the geopolitical situation has changed dramatically over the last five to seven years, bringing the political spectrum in Washington to more of a right of center or a hawkish view, whatever that is, on China.

The other thing I think, the great Ash Carter, in his book about his time at the Pentagon, recognized this, which, as he said, look. Technology—Essentially, I'm paraphrasing. Apologies to Ash. It used to be the Pentagon developed the technology, controlled it, and exported it, right.

It was kind of a government-run process. And he said today, technology is more commercially available, more diffuse, and therefore, more difficult to control. And I think those two things are at the heart of some of this conversation.

Second point I want to make is, I think Mr. Ma made a really good point, in terms of just there's a transition happening, right. I think it dovetails with my first point. And I think you're seeing, coming to my third point, which is, I think you're seeing an unsettled Washington between decoupling, whatever the definition is, full decoupling, to this risk-based analysis type of structure. And I think you look at the CHIPS Act, and what's in it, in terms of the guardrails, it looks like it fences off certain technologies, and really is not—And then you've got that plus your export control regime kind of seeing that in tandem. And I think it's very much a work in progress. And you looked at the debate over this, over the course of several months. And it changed several times. So it just underscores, I think, the nature of Washington.

Finally, and I think the other point that Mr. Ma made in terms of factors that come into this, is I think one could argue the 301-232 actions under President Trump were an effort at decoupling, or at least a complementary tool. And right now, there is debate in Washington about which 301 tariffs to roll back, right. So I think it all underscores the unsettled nature of this, the geopolitical, economic, in terms of inflationary, as well as technological things, all coming to a head, and a policymaking environment in Washington, again, is unsettled, and I think is a bit uncertain. And I think this is one of the great debates we're going to have over the next several years, in terms of foreign and technological and economic policy. And let me just stop there.

[pause]

I think our moderator just dropped—technological issue.

**DR. JOHN PARK:** Thanks for that heads up. We're having some power outages in the greater Boston area with the heat and everyone turning on their AC. Thank you for your flexibility here. With the questions here, we're heading in a great direction, in terms of laying out different aspects to a very complex question. And so with this, I wanted to proceed with looking at how, when we focus on the alliance, what role does a resilient tech supply chain play in the broader security alliance between the United States and South Korea? And with that, if you could start off with Dr. Bark?

**DR. TAEHO BARK:** Well, before I respond to your question, I want to go back to the decoupling issues. You know, we have to understand the background, why US is arguing about decoupling against China, or in a few areas. But, you know, people, generally, people are confused, because what kind of decoupling we are talking about? So at least we have to consider limiting the US decoupling from China to a few technologically sensitive sectors, which may be closely related to directly the National Security, like a semiconductor or batteries for electric vehicles.

I can assure you, that these days, the US economy, and other economies of the world, are deeply interconnected with Chinese economy. I'm talking about general phenomena. So you know, this is done through globalization for many, many years so far. So if, you know, you can see why US-China dispute continues, if you look at the trade between US and China, last year US input more from China, and increased their trade deficit against China. So we cannot simply sever all trade with China overnight.

So even in this case of semiconductor, microchips, whatever, I think a decoupling should focus on also a few technologically advanced chips, not the general semiconductor industry. Because otherwise, Korean semiconductor companies will lose the Chinese market, which is the largest market for Korean companies, for their sales of semiconductor.

Last year, almost 40 percent of Korea's semiconductor exports go to China. And this number will increase to 60 percent if we include Korean semiconductor exports to Hong Kong. So without Chinese market, Korean companies cannot survive. And in this situation, how can we talk about complete decoupling in the semiconductor industry from China? So I think that this will be a very, very sensitive and important issue in the coming years. I will come back to the role of high tech supply chain in the security area later. Thank you.

**DR. JOHN PARK:** Thank you so much. Great to see Dr. Giovannini back on the line. We're here looking at the question. We just started this round. I'll turn it back to you. Looking at the role that resilient tech supply chain plays in the broader security alliance between the US and South Korea. Over to you, Dr. Giovannini. Thanks for returning.

**FRANCESCA GIOVANNINI:** Thank you. Thank you so much. I want to apologize profusely. I'm having power outages all day today. And so if I disappear again, it's not because I find this conversation really boring, I love this conversation. So my apologies to go back and forth. I hope that doesn't happen again.

**DAMIEN MA:** That's not good for EV infrastructure, I think. I think that's a bad leading indicator [laughter].

**FRANCESCA GIOVANNINI:** It is. It is. Dr. Bark, you were addressing the question about what role does a resilient tech supply chain play in the broader security alliance.

**DR. TAEHO BARK:** Okay. Well, you know that one of the key areas of the US in the Pacific economic framework, we talked about already, is the supply chain resilience. One of the pillar is supply chain resilience, especially for high tech sectors, such as semiconductor, or batteries for electric vehicles. The main reason for the US to focus to resilient tech supply chain is because it is critically important for national security, especially when the US compete with China.

So during the last May Korea-US Summit meeting, Korean President Yoon showed President Biden Korea's strong interest in joining the IPEF. I mean the negotiation didn't start yet. So we expect Korea will actively participate in the upcoming negotiations on IPEF. I think if Korea's participation in establishing a resilient tech supply chain with the United States will not only broaden the nature of the alliance between Korea and US, but also it can play an important role in strengthening the security situations in the Indo-Pacific region.

The only thing we may be concerned about would be China's reaction to tech supply chain, which exclude China. I mean these are the real concern in Korea, because we are very close to China, in terms of economic activities. That's why our science technology ministers show that joining the Fab 4 or Chip 4 kind of alliance, they are a little bit considering the reaction from China at the moment. I will stop there.

**FRANCESCA GIOVANNINI:** Thank you so much. Very, very important question. Ambassador Lippert, how do you see this relationship?

**AMBASSADOR MARK LIPPERT:** I'm sorry, you broke up just a little bit.

**FRANCESCA GIOVANNINI:** Sorry. What role do you think, like a resilient supply chain can be, as part of the broader security alliance?

**AMBASSADOR MARK LIPPERT:** Ah, between the United States and the Republic of Korea?

**FRANCESCA GIOVANNINI:** Right.

**AMBASSADOR MARK LIPPERT:** I mean, yeah, I would just—at the risk of repeating myself from the first question, I do think it's an important pillar. I think it adds to two very strong pillars, both in terms of the FTA, between Korea and the US, and the security relationship, which is, you know, a full-fledged mutual defense treaty alliance relationship. So I think that's an important piece.

The other—The other element I would add is that, this is all part of what I used to call, when I was Ambassador of the New Frontiers, and actually Foreign Minister Park Jin has been calling it as well, into expand the alliance into 21<sup>st</sup> century issues, ranging from global health, where we've seen cooperation between the US and Republic of Korea, environment, energy, space, the Cyber Fourth Industrial Revolution, you see the broadening of the alliance, the—I would call it modernizing of the alliance, bringing into the alliance more and different diverse constituencies, versus if you go way back, you know, several decades, it was principally military personnel and security experts and analysts. It's now a much broader-based group of constituencies. And I would, again, underscore that it is something that helps point the relationship into a direction befitting and underscoring the dynamics of the 21<sup>st</sup> century. And let me just stop there.

**FRANCESCA GIOVANNINI:** Thank you very much. Damien.

**DAMIEN MA:** I don't know if I have that much to add on this particular question. I think, of course I think, when it comes to resilience, South Korea and the United States, that's got to be a big part of—it's got to be a big part. I mean, as I had talked before, when you look around, when you look at what are the handful of companies that can realistically make and supply those kinds of midstream inputs, right, chips, batteries, down to the downstream, the EVs, there aren't that many.

So, when you look to East Asia, you're looking at basically two countries, Japan and South Korea. And South Korea, frankly, makes more chips now. And so that just makes—that just

makes, you know, total economic sense. But I think, again, if we wrap everything under just sort of a national security umbrella, we also have to think about sort of like, okay, does it also make economic sense for those companies? To Dr. Bark's earlier point, China is 40 percent of their chips market. That's significant. As long as China makes the world's consumer electronics, they're going to need chips. There's no way around that, right. Because while we're talking about midstream inputs, but China makes the end products where those things are going to go to.

And so, you know, unless we start making a bunch of cell phones in the United States or elsewhere, then okay, then maybe we'll get that. So we have to think about, you know, kind of balance that with sort of, what are the economic realities that are happening right now, across the world?

**FRANCESCA GIOVANNINI:** Thank you very much. Naomi.

**NAOMI WILSON:** Yeah. I would just tag onto that by saying the goal shouldn't be to just cut off China. That is not a sound supply chain security strategy. The goal should be to compete with China. And you know, I think some of these conversations about supply chain alliances get oversimplified in the media. You know, what does that mean when you get down to the details? And I would say there are a few things that both the US and Korea can work on to facilitate that.

First is making sure that the policy environments in both the US and Korea are as welcoming as possible to businesses. And so that means incentives that are open, not just to domestic companies, you know, everybody loves the government rhetoric of basically saying, “We support our domestic companies.” And, of course, every government wants to support their homegrown domestic companies. But also, there needs to be a recognition of the benefits of that direct investment into their country.

And I think that both the US and Korea absolutely recognize that. In particular, the new Yoon administration has messaged very strongly that they're open to more direct investment, that they want the market to work for the Korean economy. So there are regulatory changes that both countries can make or be mindful of, in order to facilitate those partnerships.

And the other is, you know, creating space for companies to have successful partnerships. And that, you know, means connecting companies that work on one part of the supply chain with the other company, and making sure that they have the opportunity to work together, that there isn't a political cloud hanging over it, or there aren't regulatory hurdles that they have to jump through. At the end of the day, the goal needs to be to compete and to diversify the supply chain. And I think there's a lot that the US and Korea can do together to achieve that.

**FRANCESCA GIOVANNINI:** Thank you. Thank you very much. I want to open the floor for questions from the audience. I have one last one that I would like to pose to the panelists. But please post your question in the Q and A. And we'll definitely address it. In the meantime, as the questions come in, I want to ask one last question. And I want to build on what Tami mentioned before, which is really another narrative or another attempt, today, to think about technology competition and geopolitical questions. And this is the question between democracies and authoritarian regimes. And more specifically, the idea, at least in Washington, to launch a global alliance, a global tech alliance among democracies. And you're all experts of technology, trade. And I would like to know, what is your thinking behind this? I mean is this an idea that can work? Or is it an idea that has no leverage? So Naomi, can I start with you?

**NAOMI WILSON:** Sure. I mean, I think for many administrations, you know, ensuring the stability of democracies across the globe is very important. And so it's understandable that they would want to thread this into one of the main political and technological issues of our time. But I do think care needs to be taken in terms of how that will play out. I like the Singapore narrative of rules-based, not necessarily democracy, because different democracies are at different levels,

or different adherence to those types of principles. But you know, generally speaking, having open trade and an open regulatory environment, I think does produce very good outcomes.

And, you know, if countries are playing by the rules and held accountable, then I think that's a really good step in terms of supporting the rules-based order, and ultimately, supporting that Democratic mindset.

**FRANCESCA GIOVANNINI:** Damien.

**DAMIEN MA:** Well, on the regime type question, I guess, I think it was Winston Churchill, right, who said democracy is the worst form of government except for all those other ones that's been tried from time to time. So I think I'll answer this very simply and very quickly. And I'm going to go back to your original dichotomy of overestimation and underestimation. I think we have a tendency to overestimate regime type. And we underestimate results. And the actual, you know, what the system can deliver. Let's—whatever. We can talk about regime type all day long. But at the end of the day, what succeeds is sort of, you know, how does that system deliver what it needs to do? And if I as a system don't, then I don't think we should be emphasize regime type all the time, because it seems to not really, you know, it ultimately, it's not going to matter, unless the results show which system is competitive, is more competitive. And so I think that's – So we should put more emphasis on results rather than regime type all the time.

**FRANCESCA GIOVANNINI:** Fantastic. Ambassador Lippert.

**AMBASSADOR MARK LIPPERT:** Without, you know, commenting on the technological alliance, I mean that's, I think it's a situation where the luck really matters. So sort of speculating in hypothetical terms, pretty tough to do without seeing the what. What I would say, though, is, as a general rule, I'm just a big believer in, when you can work with your friends, partners, allies

around the world, to support and open rules-based international order, you're going to be better off. And the world's going to be better off. And I'll leave it there.

**FRANCESCA GIOVANNINI:** Thank you. Dr. Bark.

**DR. TAEHO BARK:** Well, we talk about so-called rules-based order or system.

Unfortunately, we used to have a WTO, which can provide lots of, you know, rules for trade and investment. But, especially when China becomes economically growing and have more power, doesn't tend to be abiding by the rules, especially the subsidy disciplines or investment rules and things like that. You know, this is the starting point of so-called decoupling, or whatever, that kind of issues, because US consider so-called state capitalism of China is causing a lot of problem, over facility, over supply, and also sometimes they don't respect the intellectual property rights. And they cause investors to transfer technology. So all kind of things become the base for this kind of competition or dispute between China and the United States.

So you know, the Singapore Prime Minister or Minister says that the rules-based kind of system will be the target we all go for it. For that, I think we have to improve the WTO system. Because the last months, we had so-called Ministerial Conference was held. And they don't agree too much. But I think we want to make WTO more flexible, and also more adaptable to the newly rising issues, like just the trade, whatever.

So what I want to say is, in the end, we want to see the system, new system, new governance, which can provide lots of flexible activities to all the countries who are abiding by these rules and disciplines, which is much better than decoupling and excluding some countries. So I hope— But it's very difficult to have this kind of governance. But the world leaders should consider establishing, you know, then the new 21<sup>st</sup> century governance on international commerce. This is our, really, hope to achieve in the future.

**FRANCESCA GIOVANNINI:** Fantastic. All right. So let me take some of the questions that are coming in, many. So I want to start with Timothy Richards, who asks, today the *Wall Street Journal* published an article titled “Chips Measure Clears First Hurdle in Senate” by Natalie Andrews. And Timothy asked the following question. Will the subsidies to boost US chip production affect future trade hurdles with other countries, since this might affect the supply and demand chain that's lowering the cost of worldwide chips, as the chips are produced in America? And then he asked, and what are the effects on South Korea, and the trade with South Korea as well?

Damien, Naomi, who want to take this question?

**DAMIEN MA:** I think that's Naomi. I'm the designated—I don't know. [laughter]

**NAOMI WILSON:** So mindful of the fact that the CHIPS Act is changing like by the hour. The latest that I am aware of, I don't see any significant trade impacts in the negative sense. I mean, ultimately, the incentives that are offered through the CHIPS Act should be open to all reasonable interested parties, including Korean companies. And so I don't see a trade deterrence effect there. Whether it drives prices down, yeah, I have no real economic expertise or insight to lend there.

**FRANCESCA GIOVANNINI:** All right. So Jacqueline Chang asked another very important question. If you were to look at the countries who have the rare earth minerals necessary for chip manufacturing, who would you say has the most influence with the majority of those countries? And if not the US, what would the US need to do to counter? Damien.

**DAMIEN MA:** Sure. I can take that, as I've looked into the rare earth issue. Although I'm not quite sure I understand the question. The question is?

**FRANCESCA GIOVANNINI:** Who has more influence over the countries that do actually have rare minerals? And if the US doesn't have the leverage, what should the US do?

**DAMIEN MA:** Okay. So I guess first, slight corrective, rare earth is mostly used for EVs, permanent magnets in motors, not too much for chips, as far as I understand it. So it's really sort of an EV question and batteries. Not really the batteries, but really the motors and the permanent magnets. I guess I'll answer it this way. You know, China doesn't have-- China produces a lot of rare earths. But it doesn't have a monopoly on global reserves.

So I think the simple way to think about the rare earth issue is really just a mining issue. It's a mining problem. And we need to decide whether certain countries will want to mine it. Because we have it in the United States. Australia has it. Many, many, other countries have deposits and reserves. So it's not a question of reserves. It's about, do we want to get it out of the ground? And the Chinese have decided they were the ones that were going to get it out of the ground. So for a while, they were dominating in 90 percent of global production. Now they're down to like 65 percent of global production. So there's already been some diversification.

But if we really want to continue to kind of diversify, then it comes down to mining. And it's not—And that gets into environmental issues. That gets into each country's regulatory. So it gets pretty complicated. And that's really why we shut down our rare earth in California, is because environmental regulations. So if we decide we want to mine, and if you think about EVs, right, it's mostly kind of—it's all about metals, the batteries. So it's all about mining.

So we have to think about, where do we want to mine this stuff? And if we don't want to mine it in the United States or somewhere else, then well, then we have to decide, where do we want to rely on those commodities?

**FRANCESCA GIOVANNINI:** And Damien, let me ask you a follow-up question on Jacqueline's point. The fact if, for example, China has so many trade agreements with African countries, for example, how much you think is going to change the calculations here on mining, for example? The ability for China to influence these countries to do mining?

**DAMIEN MA:** Well, yeah, China really has been-- China is really invested in cobalt mines in the Congo. Because again, it's all about the battery. It's all about the EVs, right. And so you have some cobalt there. But a lot of manufacturers are trying to diversify away from cobalt, to kind of—because cobalt is expensive. And then, of course, if you want to talk about lithium, because all batteries are lithium, then you're talking about Latin America, the lithium triangle. And China has some activities there. But you know, let me give you one example.

People don't know this, but Bolivia is the Saudi Arabia of lithium, okay. And it's just sitting there. They're not doing anything with it. So again, we need to—Yes, people have reserves. But are we going to get it out of the ground? And if not, does it matter that they have reserves? And you know, so you know, lithium is another thing. And lithium prices have spiked ridiculously higher over last year, because of the demand for batteries, right. And that's going to continue to be the case. So again, it's a mining issue. And we need to decide, do we want to mine these metals or not, to meet increasing demand?

**FRANCESCA GIOVANNINI:** Yep. Thank you. I have another question. And this one is for Dr. Bark. Jessica Taylor asked, in the semiconductor space, should the South Korea-US alliance include security guarantees that seek to address China's willingness to weaponize its economy? And if so, what would that look like? And Jessica Taylor is a former US-SK geopolitical strategist. And Dr. Bark, this question is for you. Should we include security guarantees?

**DR. TAEHO BARK:** Well, you know, security guarantee cannot actually include the secure supply—stable supply of materials and parts and components. This is a really important issue.

That's why Korea cannot willingly come into joining the CHIP 4 or FAB 4 or even strategic alliance for high tech supply chain resilience. Because we are heavily dependent on China, in terms of importing large amount of key materials. I don't know the exact number. Maybe more than 200 key materials we are using for our manufacturing, general manufacturing, or even semiconductors or batteries for EV. More than 80 percent, 90 percent, we are depending China.

So even though we include some kind of security things, if China weaponize the exporting their own materials to Korea, then you know, Korea cannot really survive, actually. So we really want to—That's why I want to go back to the rules-based kind of system in the future, because you know, US is putting more subsidies on semiconductor by using CHIP Act. And European is doing the same thing. But we used to complain or criticize China, because they are putting so much money in high tech industries. But we are doing the same thing. We are competing by subsidizing all kinds of sectors.

Then, in the end, we are all losing. So that's why we, sooner or later, we should consider establishing a new kind of governance which can control the subsidies, and investment rules, and all, digital trade, and environment within the system. Otherwise, we are competing to each other. And we know that, from textbook, retaliation to each other will only end up losing game rather than winning game.

**FRANCESCA GIOVANNINI:** Thank you. Naomi, this is a question for you, and possibly for Damien. Nina Fernandez asks, as TSMC, in some select electronics, intensify that competition for next generation of chip dominance, who do you see emerging ahead, and why?

**NAOMI WILSON:** I guess that's a million dollar question, or at least a million dollars. Place your bets on the stock market. So I don't know who will win. What I can say is that the competition is the important piece. You know, it's not—When we talk about these issues, a lot of times we like to talk in terms of who will win, who will get there first, winners, losers. If the

competitiveness ecosystem works the way it should, it should all drive competition and innovation. And companies should be specializing in the areas where they have the expertise and they have a particular advantage in the market.

And, you know, don't forget, companies are not only competitors, but they're each other's customers, you know, especially in the semiconductor ecosystem. So I really don't think it's as—I don't think it's as simple as who will get there first, or who will win. But we should all be pushing for more competition if we want to get those next big technologies.

**FRANCESCA GIOVANNINI:** Damien, what do you think?

**DAMIEN MA:** Well, no company wins forever. I think just look at, you know, Intel was obviously a global leader for quite some time. And now it's definitely, in terms of the advanced fabrication of chips, it's fallen behind, you know, a company like TSMC. And they're trying to catch up. So I think there's always cyclical falling and rising. And some companies have invested well. And you know, some companies have decided to go a different direction. So, you know, I wouldn't put my money on anybody. But I think, again, I go back to, I think you're looking at these high entry cost industries is going to get sort of, at max, maybe two or three major players.

And so you kind of look at them. And those are probably going to be the leaders. Whether they'll win at any given time, who knows? But that's sort of, you know, you're probably going to get sort of a trinity or, at max, maybe four. Because you're just not going to be able to get too many other ones that are going to get there in any meaningful period of time.

**FRANCESCA GIOVANNINI:** Thank you. Dr. Bark, this is again another question for you, which is more on the geopolitical and securities side. Stephen Ellis was a Harvard graduate student in international relations asked, Korea, Japan, and in most instances, China, compete as the world's largest consumers of LNG. How does the growing scarcity of global LNG resources

affect the South Korea effectiveness to produce and export its good in the context of a healthy supply chain flow to grow their economy? We have not talked about energy security very much in this panel. But it's a really important question So what do you say about the concerns of South Korea to be able to export its goods at a competitive price?

**DR. TAEHO BARK:** Well, we already got hurt, because of the rise of raw materials, energy, LNGs, whatever. So we don't produce any energy domestically. I mean, we all import oil and gas, and then use that and manufacture, you know, the petrol chemical products and export to the world. So obviously, the price, you know, we produce, it is increasing. So I think right now, our government is trying to really diversify these sources of imports of energies. We are looking at not only Middle East, but also even United States and Canada and Australia. So we are really diversifying our energy sources for our manufacturing sector. This is the only thing we can do at the moment. But we are actually suffering from global inflation, obviously.

**FRANCESCA GIOVANNINI:** And Dr. Bark, can I ask, how much do you think the Ukraine war will further impact the market in general, and the South Korean economy?

**DR. TAEHO BARK:** So far, we are not directly impacted from the war. I mean Europeans are most directly impacted region. But indirectly, we are facing huge rise in oil prices, and energy prices. And also, the agricultural product price is also increasing. We are also importing agriculture product to our own economy. So, you know, even though these wars doesn't really directly impact on the Korean economy, but we are indirectly impacted.

But we are also hoping that maybe, in the future, we will be in a position to help Ukraine reconstruct their own economy, because we are very good at that, you know, in construction and other things. So hopefully, we want to see this war end soon. And then Korea and other countries can help Ukraine rebuild their own economy.

**FRANCESCA GIOVANNINI:** Could I turn to you, both Naomi and Damien. In your assessments of the supply chain vulnerabilities, how much does energy security features into these examinations? And what is your estimate about how energy insecurity will affect the supply chain? Naomi, can I start with you?

**NAOMI WILSON:** I'm just going to pass that on to Damien, not particularly my area of expertise.

**FRANCESCA GIOVANNINI:** Damien, what do you think?

**DAMIEN MA:** Energy security, when it comes to supply chains? Well, I do think that energy security has been on the—the idea of energy security has been on the rise, in part because of geopolitical conflict that you mentioned, but also because of inflationary pressures. And I think we're seeing some difficulties in meaningfully replace reliable-based power with just renewables, right. And so you're seeing, you know, obviously, the Germans might be going back into coal. China is doing more coal a little bit now in the immediate term. It doesn't mean it's going to swing all the way back.

But certainly, right now, I think the idea of—you know, the notion of energy security is, it's dominating policymaking more than probably decarbonization, because of the current volatility and inflationary pressures. And that's going to be important. And that's something that we, I think we need to probably think about as a global economy, sort of how disruptive both sort of ensuring energy security on the one end, but sort of how fast we need to be going on decarbonization, because that, again, has proven that it's—it's obviously something we want to pursue.

But the pace and the sequence and the kind of disruption that it's going to bring is something that we can see that, you know, at least here in America, consumers are very fixated on gas prices.

And so that's something that I think is going to increasingly be something that I don't think we have a very good way of thinking about how to balance it just yet, right. And will it affect supply chains overall? Sure. If energy cost goes up, for a lot of these firms, yeah, then they're going to stop production. So absolutely.

I mean we had the incident in China at the end of 2021, very significant, unanticipated blackouts, because of energy shortage. And they had to actually stop production in many provinces. So that contributed even a little bit more to the supply chain crunch that we saw in 2021.

**FRANCESCA GIOVANNINI:** All right. So let me ask another question, which is more sort of broad question. So what else can governments do?

**NAOMI WILSON:** I think we lost our moderator again.

**DR. JOHN PARK:** We did. Yeah, exactly. –

**DAMIEN MA:** – Energy security, just, you know – Man. Talk about energy insecurity.

**DR. JOHN PARK:** So Damien, we went to great lengths to accelerate the illustration of your points here. So it's working. So the question that Dr. Giovannini was getting to, was looking at, what more can governments do to accelerate building tech supply chain resilience? What can they do that they're currently not doing? And so, if I could start with Naomi on that one, that would be great.

**NAOMI WILSON:** So I would say, generally, it's not a one-size-fits-all solution. And governments need to keep talking with the private sector, and understand the dynamics of the changing situation, and the changing technology. And, you know, help work through where are

the bottlenecks? Where are the potential points of failure? And hear from the private sector, too, what can government do that will be effective, and will help us in the long run?

**DR. JOHN PARK:** Thank you and same question, Dr. Bark. What can governments do to accelerate building tech supply chain resilience, that they're currently not doing?

**DR. TAEHO BARK:** Well, actually, Naomi rightly mentioned that, even in Korea, government is now solving or investigating the bottlenecks of resources or materials or parts and components we are depending on foreign countries. So by doing that, but if you want to do that, you have to have a very close conversation with the private sector. I think the more important thing in the future is that governments should communicate with private sector together.

But the thing is, you know, private sectors don't want to reveal their information with other private sectors. This is a problem. But I think, if you want to jointly prevent this kind of problem in the future, I think that we have to share the information, and especially with the government.

One thing which I heard very interesting story from one of the global company CEOs, is that they are now preparing for so-called vertical integration from the bottom to the top. Doesn't mean that they want to do themselves, but they want to have a control of each stages of political integration. So we are moving really against, you know, opposite direction to the globalization. So I think the firms are feeling, you know, this kind of situation very seriously. And I think in the future, government and private sector, jointly, discuss about how to establish safe supply chain in the future.

**DR. JOHN PARK:** Thank you. And Damien, same question, in terms of what more governments can do to accelerate building this kind of resilience in the tech supply chains?

**DAMIEN MA:** Well, I think—Well, there are a couple ways to kind of dissect that question I guess if, hypothetically speaking, if we are serious about wanting to reshore or friendshore, you know, there is the option of—I think I mentioned there is going to be a switching cost, right, if we actually want to kind of tear away from the current supply chain, and kind of move it to places, you know, whether will governments subsidize that? That's one. Will the governments subsidize the switching costs? Because I think that's something that companies are going to ask. And two, I think related to what Naomi and Dr. Bark said, which is, you know, I think it will be good if not just the US government, but all governments could do more of a holistic assessment of, you know, really get down to the details of, what are we actually missing, that is of critical importance? What is the scarcest thing that we don't have?

You know, for one thing, we did a case study on, you know, permanent magnets. And throughout our whole research, it turns out we don't produce—we don't have any single permanent magnet production capacity in the United States. So zero. So that might constitute as something we might want. So you know, but I think it doesn't apply to every single sector. So I think we just need to have a more granular understanding of, what is the most severe deficient thing that we have? And whether that's important enough for us to actually make it domestically, or we have reliable partners to actually supply it to us. So I think both, subsidizing switching costs possibly, or having a really holistic understanding of what we're missing.

**DR. JOHN PARK:** So Naomi, I wanted to actually go back to a comment that Dr. Giovannini mentioned. She brought up the effects of the ongoing Russian-Ukrainian war on South Korea's economy. If you look at it from the angle of, you know, basically after Russia's invasion of Ukraine, the US and several other countries have increased their use of export controls on high tech goods, including chips. So do these type of export controls and sanctions cause difficulties for South Korean companies?

**NAOMI WILSON:** Yeah. There's never a simple answer. And there's never a one-size-fits-all solution. Export controls are one tool in a toolbox. And certainly, you know, with the Ukraine situation, we're in a very difficult and unprecedented time. And governments are looking at all tools in their disposal, as they should. But to think of export controls as a panacea would be misguided.

And there are ramifications. Any time you do something to interrupt trade, or disrupt supply chains, there's going to be a cost attached to that. And so it's really for the government to weigh, are the costs worth the benefits? You know, whatever message you're trying to send, whether it's a national security issue, or to try to put economic pressure on another government, those are all considerations. But, you know, in terms of how much it hurts specific economies, it's tough to say. It's tough to say in the immediate aftermath. And we don't know how long these policies will be in place.

Looking at another policy that has been highly disruptive, tariffs, which, you know, remain in place on billions of dollars worth of products, you know, that we're continuing to see the negative impacts and the long-term impacts of that policy. So you know, looking at what you're trying to achieve, understanding what the second and third order of consequences are, and what is your tolerance for those ramifications that should be all part of the policy discussion.

**DR. JOHN PARK:** Thanks for that, Naomi. Dr. Bark, you mentioned at the outset, you were looking at it from the perspective of globalization. And you essentially saw companies searching the world for lowest unit costs, intertwined supply chains. As we see, as Dr. Giovannini was mentioning, the application of these types of economic statecraft tools on Russia, how do you see that potentially affecting South Korea foreign companies as well? So similar type of question to you.

**DR. TAEHO BARK:** Well, you mentioned the export control. I mean I don't know the exact statistics, but we are not really trading very much with Russia. So you know, generally speaking, for that matter, we are not very much affected. However, many individual firms, small and large, they are checking the government, whether their activities is a violation of this export control, which is not very clear. I mean, US export control is not easy to understand.

So lots of discussions. And also, talking to US law firm, whether this type of export is violation of this export control. Because we are keen to the export control by United States, because we are—if we violate, then we can have a lot of negative impacts from US government. So, so far, the magnitude of the damages or problems are not that big. But if this lasts longer, then Korean firms will have a hard time in abiding by these export control rules, in many different areas.

**DR. JOHN PARK:** Thank you. Thanks for layering the aspect of trying to decipher for private sector companies how to abide by some of these measures coming down. Damien, to you, another question that came in is, how important is cybersecurity to tech supply chain resilience? Have recent ransomware attacks on major companies, such as the Colonial Pipeline in the US last year, affect South Korean businesses thinking on this issue, how you perceive South Korean businesses as they view these type of cybersecurity threats?

**DAMIEN MA:** You know, frankly, I really don't know that much about the cybersecurity side of things. So I don't know if maybe Naomi or maybe Dr. Bark have more thoughts on that. I wouldn't really know what to comment on that exactly.

**DR. JOHN PARK:** Sure. Naomi?

**NAOMI WILSON:** Yeah. I mean, I would just say that cybersecurity and network security are a huge part of any multinational company's daily operations. And it is their life blood. It is how they communicate with their customers and manage all of their data. And, of course, protect that

data. So in terms of a direct link to the supply chain, I'm not sure that I would draw that parallel. But a disruption to business, and certainly that is part of the supply chain, and the predictability, and the smoothness of operations, that it would definitely have an impact.

**DR. JOHN PARK:** So the next question, Dr. Bark, I think this one would be very well suited for your expertise. As South Korean companies continue to invest, both in China and the United States, when it comes to technology companies, particularly in microchips and so forth, how do you see Chinese economic statecraft, when it comes to coercion? We've heard earlier references to THAAD, and how China applied that economic pressure on South Korea. Is there any new thinking? Are there ideas, in terms of how to address that? Because the whole basic exposure to both marketplaces presents a certain type of vulnerability. What is the latest thinking in South Korea related to this issue?

**DR. TAEHO BARK:** Well, actually, Korea's investment in China is decreasing, not because of US-China disputes, but the business environment, including the level of wages. The wages, Chinese wages are rising very rapidly. I understand that the per capita GDP of China is now \$10,000 dollars, while the per capita GDP in Vietnam is less than \$3,000 dollars. Naturally, Korean firms are moving, you know, leaving China and making more investment in other ASEAN areas or India.

So you know, this kind of current situation, we are making more investment in United States. Not because of—as a pattern of globalization This is more like a strategic kind of movement. But so far, the so-called decoupling, or other coalition of supply chain partners is not firmed up yet. So we don't know what China is reacting to this. But obviously, these days, Chinese leaders, or some officials are saying that Korea should not join the IPEF or should not join the CHIP 4 alliances.

But this time, it may be different from the cyber case, because we are not directly doing something with only the United States. All kind of activities are being done with other people, like IPEF, 14 countries, FAB 4 is four countries. So I don't think that China will directly cause Korea in many areas.

However, they are considering something to—not retaliate, but you know, giving hard time to Korea. We don't know exactly how China will react. But we are concerned about that. But it may not be the same case as Quad case this time.

**DR. JOHN PARK:** Thank you. As we go to our last two questions in the queue here, the question that comes up is, when you address the topic of resilient supply chains, we heard earlier in the conversation related to the costs, and how it is cost-intensive. And it will take time. What do you think is the greatest point that we need to consider in terms of managing expectations as we see the greater focus on trying to increase the resilience of technology supply chains? So if I could start with you, Damien?

**DAMIEN MA:** Sorry. The question is the expectations of how successful we're going to be? Or in terms of the outcome of supply chain resilience?

**DR. JOHN PARK:** Sure. So it seems like, with the question that we received here, there is an expectation that, once we have this type of focus on building supply chain resilience and technology, we have the announcements of investments coming in, and Samsung Electronics building factories in the United States. There is a sense that we're moving very quickly. But, when it comes to important managing of expectations, what would that be for you?

**DAMIEN MA:** I think building up a lot of supply chains from scratch, or supply chain resilience, is probably a five to, you know, probably a five to ten year effort. And I think yes, there is going to be a lot of investment. But it's going to take a while for those plans to get built,

for them to actually start production. And so this is not something that you can snap your fingers, and it's going to be done overnight. And again, I think it's been stressed, over and over again, is that this is more or less a industry private sector-led effort, for the most part. Government can do certain things. Government can coordinate. Government can sort of, you know, provide information.

But, at the end of the day, the decisions are being made by the companies themselves. And they have to understand, you know, these kinds of harder technologies—so we're not talking about apps, we're not talking about software, we're talking about physical plants, where you're manufacturing very complicated tech. That's a big investment. And that's going to take some time for that to actually bear fruit.

**DR. JOHN PARK:** Thanks for that, Damien. Naomi, same question

**NAOMI WILSON:** Yeah. I would just say that it's a longer-term endeavor. That's the primary expectation that I would manage. You know, one investment, one business deal is great. But it does not, overnight, make any country the new hub for supply chains and semiconductor technology.

**DR. JOHN PARK:** Thank you. And Dr. Bark, you referenced the rules-based approach and the necessity for that. As you laid out some of your early comments, for you, what do you think when it comes to our audience's perspective here, what are some considerations that are important in managing expectations, as there's a greater focus in building out this kind of resilience in tech supply chains?

**DR. TAEHO BARK:** Well, I didn't think about that very deeply. But the one thing we are concerned in Korea is this. Because, you know, when we talk about tech supply chain resilience, this is like a highly competitive situation in technology. So, you know, if we invest in the United

States, maybe Samsung or LG or Hynix, SK Hynix, if they went to M&A or a small research-oriented US companies, you know, this kind of situation will prevent the US government from thoroughly investigating the situation, so that they may not allow the M&A for Korean companies. We are concerned, because we are making a lot of investment. But even if you want to have M&A with research companies in the United States, if our Korean companies have huge businesses in China, then maybe this kind of M&A is likely to be turned down through [inaudible] or some kind of, you know, foreign direct investment screening system of the United States.

So, you know, when we talk about overestimating, underestimating kind of situation in the first question, so even this kind of thing is very, very much a concern. We are not guaranteed that they may have this kind of M&A allowed in the United States. So what I'm saying is this. You know, setting up or establishing tech supply resilience kind of system, we'd have to build up more trust between countries, and also between firms in the US and in Korea, so that we can enhance the trust by building these kind of joint activities, then companies and government may feel much more comfortable in the future. Because, you know, even though—Like Japan and the United States, they have much more comfortable situation than Korea and United States. So this is the thing I think we hope to develop to be more kind of comfortable level in the future

**DR. JOHN PARK:** So an important element. Thank you. And moving to the final question for the panel. When Dr. Morris Chang toured the United States, looking at some of the TSMC plans to expand capacity, new plant development, and so forth, he commented on the scarcity of engineering supply, basically, the number of US engineers who could help, in terms of building out some of these factories. So the question to the panel, what can the US government do to address this? We have greater investment flowing in from Taiwan and South Korea. But Dr. Chang points to this point of essentially, the scarcity of qualified engineers to essentially work on these type of projects. So if I could start with Damien on that one please?

**DAMIEN MA:** Well, obviously, the obvious answer would be, try to have more STEM graduates in the United States. But if the domestic supply is not sufficient, then we got to be able to import talent, which means reforming our immigration policy in a more significant way, so that we do attract more STEM talent that come—not only come, but also stay. And also, let's try not to make them leave the United States once they've gotten their PhDs, or once they start working in companies. Because again, if we can't produce enough domestic STEM graduates, then we've got to, you know, basically make sure that the foreign talent—that we remain a magnet for foreign talent. And that's really one of the greatest advantages for the United States. And it has always been.

**DR. JOHN PARK:** Thank you. Naomi.

**NAOMI WILSON:** Yeah, I completely agree. The US ability to attract and retain talent needs to remain a strong suit. And I would say, over the past few years, it's been a difficult environment for immigration policy and for Visa policy. And that's something that we really need to protect. There shouldn't be any fear of attracting talent regardless of where that talent resides, and trying to retain it. Because ultimately, that is how our country was founded. And that's how we'll continue to be prosperous and innovative.

**DR. JOHN PARK:** Turning to you, Dr. Bark.

**DR. TAEHO BARK:** Well, I totally agree with Damien and Naomi. But I agree that US should have a more flexible immigration policy. But that means that, you know, Korea also needs engineers, ourselves, for our own semiconductor industries or battery industries. However, these days, our students are studying abroad, particularly in the United States. After they finish their degrees, they don't come back to Korea, because the US is, you know, they need more experts. So they are hiring more and more people. So that means it's good for United States. But

you know, Korea and other countries will have difficult time in also supplying the appropriate expertise or engineers, domestically. This is also our concern.

**NAOMI WILSON:** So it sounds like you're proposing a really good Visa reciprocity and student exchange program for both countries.

**DR. JOHN PARK:** A lot of good opportunities on the horizon here. Thank you so much I really appreciate your sharing of your expertise on this very complex topic, and something that we are going to be returning to, from time to time. Thank you again. And really appreciate you joining us tonight. Thank you.

Now I'd like to move to the wrap-up session for today. Today's panel, we heard our speakers provide great insights in terms of how the US and South Korea could work towards building this resilient technology supply chain, for mutual prosperity and mutual security. We heard the wealth of opportunities and challenges, in basically trying to navigate through all of them.

During the third and final day of our summit, tomorrow, we'll be placing the spotlight on urgent cybersecurity issues. Our day three keynote speaker will be Jean Lee, host of the BBC World Service Podcast, “The Lazarus Heist.” She was previously the Pyongyang Bureau Chief with the Associated Press.

Panel three will focus specifically on “Addressing North Korea's Cybercriminal Statecraft Activities.” Alex O'Neill, the co-founder, and co-lead of the North Korea Cyber Working Group here at the Belfer Center will be moderating this panel. The featured speakers include Jason Bartlett, Research Associate with the Energy, Economics, and Security Program at the Center for a New American Security, and Ashley Chafin-Lomonosov, who is the DPRK Cybercrimes Expert at Chainalysis. We also have Saher Naumaan, who is a Principal Threat Intelligence

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Analyst at BAE Systems Applied Intelligence, as well as David Park, Senior Policy Advisor at the US Department of the Treasury.

We'll have closing remarks by Consul General Kijun You of the Korean Consulate General here in Boston.

Thank you all for joining today. And we look forward to seeing you tomorrow. Good evening and good morning. Thank you.

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