

# National Security Challenges: Outpacing China in Emerging Technology

Senate Banking, Housing, and Urban Affairs  
Committee

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## WITNESSES:

**EMILY KILCREASE**, Senior Fellow and Director of the Energy, Economics, and Security Program @ Center for a New American Security

**JAMIL N. JAFFER**, Founder & Executive Director @ National Security Institute

**LINDSAY GORMAN**, Senior Fellow for Emerging Technologies @ German Marshall Fund

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**SHERROD BROWN:** Committee will come to order. Last week the committee heard about the human toll that illicit fentanyl takes on our families, our friends, our neighbors. Witnesses stressed the need to come together to take action to stop the flow of illicit fentanyl from China and Mexico. This committee, the entire Senate did – just did that – did just that last year when Senator Scott’s and my bill included the FEND Off Fentanyl Act. We were successful together in making it a part of the annual defense authorization bill.

It hasn’t been – become law yet, even though it passed the Senate. The bill with our amendment in it passed the Senate, I believe with 90 or 91 votes because politicians in the House, extremists in the House have played politics and kept it out of the NDAA. FEND Off Fentanyl Act was not the only committee priority that the House blocked last year.

They blocked two other important national security amendments in NDAA, both of which received more than 90 votes in the Senate. 91 Senators voted in favor of an amendment offered by our colleagues test – Senator Tester, thank you, and Senator Rounds whom I saw earlier this morning, to prevent big investors in China from buying up American farmland and food businesses.

Clearly, in our national security interest. We can’t allow foreign adversaries to buy up farmland in Ohio and around the country. It’s a threat to our national security. It’s a threat to rural economies and our way of life. Ninety-one senators also voted in favor of an amendment offered by Senators Casey and Cornyn, bipartisan amendment to allow us to better monitor US companies’ investments that fund Chinese technology – fund Chinese development of critical technology, including military technology.

All three of these provisions have broad support from Heritage Action to the coalition for Prosperous America. More importantly, they have the support – overwhelming support of the public. For far too long, our policy around China catered to multinational corporations and don’t think the House and Senate were part of that.

Failed state – they failed that policy. Failed states like Ohio and this committee we worked to change that. We found common ground. It’s why all three of these bills remain top priorities in this committee. I’m committed to working with colleagues to make these provisions law. Of course, the threats posed by China are many and varied and growing.

Our work to address national security risk posed by the Chinese government should not end with those three priority – provisions. We agree that China poses a real and growing threat to our national security. Perhaps nowhere is that risk more acute than with the development of advanced technology. China’s used advanced technology, much of it stolen from the US, some of it sent there through corporate outsourcing to ramp up its military modernization and build a

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mass surveillance state that commits deplorable human rights violations, including the detention of millions of Uyghurs in Xinjiang.

Addressing these threats from the Chinese government, improving our domestic capability to compete with China have been a top priority of this committee. Five years ago, we updated the laws that govern our export control and inbound investment screening programs. Now we must assess whether our current authorities and the resources we commit to them match the threat we face.

Export controls can be used to deny China and others access to US technology that they could use to undermine our national security. We've made export controls a central feature of our national security and our foreign policy. In addition to assembling a global export control coalition in response to Russia's war against Ukraine, the administration has added hundreds of China based entities to restricted trade listed – listed and imposed countywide, I'm sorry, countrywide controls there restrict China's access to advanced semiconductors and tools and equipment needed to produce them.

It ramped up enforcement efforts to safeguard our most sensitive technologies. But as Commerce Secretary Raimondo noted, the export control budget of the Bureau of Industry and Security is roughly the same as it was a decade ago, despite its ever increasing workload. If we agree that export controls are critical to our national security, and I think we all do, then that isn't good enough.

We need a China policy for the world we live in today. We must prepare for what could come tomorrow. It means we must upgrade our economic security authorities and resources, accelerate efforts to persuade other countries to join us, and enhance our analytical capabilities so that we can better understand the effects that our economic security tools have on China, on US companies, on companies in partner countries.

Well, today – we'll discuss today with our three witnesses how we should rethink and reorient how economic security programs are implemented to address the full range of risks posed by China. We'll examine how we can strengthen these authorities and resources to build a stronger, more responsive economic security policy.

Our country's policies regarding China have failed for too long and they've been written historically, we know this, they've been written, aided and abetted by the Senate and the House and presidents of both parties who sold out American workers, pure and simple, to increase the profits of multinational corporations always, always, always looking for cheap labor, not to benefit our national security, not to benefit American workers.

This is on – this is on everyone that participate in this. We know that when companies outsource jobs, they outsource innovation, they outsource

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technological capabilities along with them. We live with the consequences. Look at the solar industry. Look at semiconductors. We can't allow China to continue to use that technology.

In many cases say it, they stole it, to enhance its military capabilities. We can agree that China is a real growing threat. Countering that threat and updating the failed policies of the past will continue to be a bipartisan focus of this committee. I thank Senator Scott for that and I know it will continue.

Tim?

**TIM SCOTT:** Thank you, Mr. Chairman. Good morning to the witnesses. Thank you for being here as well. Thank you, Mr. Chairman, for this opportunity to talk about such an important topic. But before turning to this hearing, I'd like to take a moment and draw attention to the recent Iran backed strikes in Iraq. Anytime American lives are put at risk, whether it's from Iran or their terror proxies like Hamas, we need to have a strong response.

And that starts with this chamber passing my Revoke Iranian Funding Act. Every dollar that goes to Iran from this administration's actions is a dollar that supports terror. Thank you. America is the land of opportunity and freedom, the opportunity to innovate, produce, and execute on individual ideas. These principles are what drives our strides and technological innovation and our emphasis on entrepreneurship.

We have the strongest economy in the world driven by its dynamic growth and evolution. We are the global gold standard that countries look on with envy. However, American exceptionalism is under attack from a country that doesn't want to play by the rules. That country is obviously China. To make sure our success does not become the victory of others, the United States government must act strategically and with strength in protecting opportunities for growth at home and abroad.

When we look at adversaries like the Chinese Communist Party with their centrally planned economy that actively works to distort global markets for its own gain and continuously makes overt attempts to oust us from our perch of leadership, we don't have to ask the question are they playing by the rules because we already know the answer to the question, and the answer is emphatically no. But China's approach with their controlled markets, government interventions, and intellectual property theft is shackled to the openness of others.

So we must act strategically to ensure that we are safeguarding America's treasure; our ability to innovate. We cannot let China continue its malign activities, especially in regards to using or even stealing American innovation and American technologies for nefarious purposes like advancing its rapidly growing

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military.

So as we consider American security and prosperity from the Banking Committee's jurisdiction, we should look first at our economic security tools. We need to examine the authorities provided to the executive branch, how they have been used, and how they can be improved for maximum effectiveness. However, an over application of these tools has the potential to push our adversaries closer together and damage the US and our industries long term abilities to innovate and generate jobs and to generate growth.

Therefore, our use of these tools must be sharp but tailored. Thankfully, we can isolate bad actors through our sanctions policies, we can restrict malign investment through our CFIUS process, and we can curtail the export of critical goods and services to our enemies. These actions are stronger when we work together with our allies and stay focused on the true problem at hand.

But unfortunately, this administration is yet again taking the wrong approach. This administration has put politics over policy. And in some ways, that is playing right into the hands of China. For example, the Department of Commerce Bureau of Industry and Security, the steward of our export controls, is currently engaging in politically motivated attacks against illegal firearms industry, a troubling trend this administration's regulators try to target lawful businesses through the regulatory process that don't fit their political narrative.

This undercuts the Commerce Department's important mission of safeguarding US technology, opening the door for distractions that will allow the CCP to take advantage. But commerce isn't the only perpetrator. The Department of Treasury's primary focus appears to be on pursuing the limits of climate and green energy financing policy.

And frankly, these objectives only advanced China's solar and critical mineral – mineral energy positions in geopolitical affairs. Treasury's time, attention, and taxpayer provided resources would be much better spent working to ensure our sanctions policies on China remain up to date and promoting as well as protecting American industry abroad.

We need an administration that is focused on countering the real threat, China, not one that is more interesting to politics. So while I'm grateful that we have such an esteemed panel before us today, I think it's imperative that we hear directly from the administration as well. That said, I look forward to hearing from each of you and your expertise on the issues that will help strengthen our – our economy and strengthen our position against China and, importantly, to learn more from their perspectives on how we should act and respond to the threat.

**SHERROD BROWN:** Thank you, Senator Scott. Emily Kilcrease, a senior fellow and direct of – the director of the Energy Economics and Security Program

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at the Center for New American Security. Ms. Kilcrease, thank you for joining us. Jamil Jeffer [sp] – Jaffer is the founder and executive director of the National Security Institute and assistant professor of Law at George Mason University.

Welcome. Lindsay Gorman is senior fellow for emerging technologies at the German Marshall Funds Alliance for Security – Securing Democracy. Welcome, Ms. Gorman. Thank you all for being here. Ms. Kilcrease, please begin.

**EMILY KILCREASE:** Good morning. Chairman Brown, Ranking Member Scott, members of the committee, it's an honor to be here speaking with you today. My comments draw from a large body of research that I've conducted on economic security issues at the Center for New American Security as well as my prior experience proudly serving in economic security roles in the US government.

And please let me note that I'm speaking today in my personal capacity. As Secretary of State Antony Blinken has stated, China is the only country with both the intent to reshape the international order and increasingly the economic, diplomatic, military, and technological power to do it. The China Challenge presents unique difficulties compared to prior eras of strategic competition, given China's deep integration with the US and global economies, which creates new types of national security risks arising from economic entanglement.

Russia's brutal invasion of Ukraine and the increasingly authoritarian bent of China under Xi Jinping means that US policy cannot rely on the deterrent effect of economic ties. It must instead focus on mitigating the national security risks arising from the economic relationship, prevent China from exploiting the open nature of the US market, and anticipate future risks that may emerge due to the rapid global advance of critical technologies.

These are formidable challenges and will require the government to prioritize economic security programs. And as Congress considers ways to strengthen the capacity of US economic security programs, key themes emerge across all of the programs related to strategy, evaluation, resources, and international partnerships.

On strategy, the United States needs but does not have an economic security strategy, one that's integrated with our national security strategy and provides clear direction on how the United States will use all of its tools of economic statecraft in tandem to protect its economic and security interests with respect to China.

A clear strategy will also facilitate conversations and alignment with key international partners. On evaluation, the United States is using economic security tools in greater and more clever ways than ever before, yet it does not have robust processes to assess whether these tools are actually working. It should – and it should include a clear eyed look at the impact of these tools on

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US competitiveness and US alliances.

On resources, implementing and enforcing a greater scope of economic security programs will require resources. And importantly, this means not just more money, but more money well spent prioritizing those investments that can add efficiency and analytic rigor to the economic security programs. On international partnerships, a unilateral approach to economic security will not be a durable one as foreign firms rush to backfill US technology exports and investments in China.

China fears a united West and it's critical that the United States leverage its advantage of alliances as it manages the strategic relationship with China. In addition to these cross-cutting themes, let me share a brief thoughts on the set of economic security tools that we'll be talking about today. And I'll start with export controls.

The United States is implementing new and more innovative types of export controls including country-wide controls on commercial technologies in response to China's military civil fusion strategy and novel extraterritorial controls, including the foreign direct product rule. As export controls play a more central role in US foreign policy, the capacity to enforce these roles while also evaluating their effectiveness and on top of that assessing the need for additional controls remains a bureaucratic challenge.

Implementing new controls in emerging tech areas is particularly difficult as technology moves faster than government can adopt policies in response. The budget for export controls has remained flat in real terms for over a decade. Additional resourcing, which Commerce Secretary Raimondo has called for, can enable much needed investments including related to export enforcement, regular review and updating of the control list, and longer term efforts to strengthen cooperation with international partners.

Turning to CFIUS, first, I commend Congress for its keen focus on resources as part of the 2018 firm updates to the CFIUS process. This focus and attention has enabled CFIUS to effectively implement its expanded FIRRMA mandate. As Congress considers further updates, I encourage you to consider expanding the CFIUS definition of critical technologies to allow CFIUS a stronger ability to review transactions involving emerging tech areas and CFIUS, excuse me, Congress can also reduce mission creep by CFIUS by passing data security and data privacy legislation, issues that consumes significant CFIUS resources simply because there are no other authorities to deal with those concerns.

Finally, on outbound investment, Congress should establish new authorities to regulate US Investments in China. An outbound investment programs should focus on those specific transactions that may convey non-technical industrial knowhow to China in critical technology sectors with relevance to US national security interests.

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An effective design will include mandatory notifications, targeted prohibitions of investments in technologies that represent high national security risk, entity based restrictions for particular bad actors, and end use restrictions. Thank you for the opportunity to be here today and I look forward to your questions.

**SHERROD BROWN:** Thank you, Ms. Kilcrease. Mr. Jaffer, welcome.

**JAMIL JAFFER:** Thank you, Chairman Brown, Ranking Member Scott, members of the committee. I appreciate the opportunity to be here to talk about the very real threat, the very real national security threat that China poses to our country and the connection between that threat and our ability to innovate and emerging technologies here in this country.

I want to thank the chairman and the ranking member for their leadership on issues related to China, including your leadership on the critical issue of fentanyl crossing our southern border from China that's killing thousands of Americans on a yearly basis. When it comes to China and emerging technology, the facts are this: China has built its economy on stealing American and allied intellectual property.

Millions and billions of dollars in total of American research development dollars walk out the back door to China every year. That research development money is critically important to our ability to ultimately succeed in the larger economic, political, and military conflict with China. We won't win on steel.

We won't win on population. We will only win if we out-innovate China and outwork China. We can and will and have done this in the past and we can and will do it again. But it requires significant action. It requires preventing American companies from transferring significant amounts of American technology to China inadvertently, whether through theft, forced IP transfers, joint ventures, or the like.

The Chinese know how to manipulate our desire to access their markets in order to get our intellectual property. They have done it before. They will do it again. We need to work tightly with industry to ensure that doesn't happen. At the same time, we need to build capability in this country. That means providing the kind of tax and economic incentives to our companies to build and innovate here and to keep that intellectual property here in this country.

It also means doing no harm. It means avoiding overregulation. It means avoiding selective enforcement of existing laws or modifying existing law to target our key innovative – most innovative companies in this country. 70 percent of research and development dollars in this country are spent by the private sector.

Seven of the top 10 R and D spenders in this country are technology companies including every single one of the top five. Going after our technology companies



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in an environment of competition with China makes little to no sense. At the same time, we need to ensure that we are incentivizing Americans, American companies, American entrepreneurs, and investors to invest here.

That means ensuring that we have the right structures and regulatory procedures in place to ensure that investments are free open and fair. That also means that we need to work with our investors to ensure that they do the right thing as well. There is no good reason why American investors should be investing in our adversaries technology.

They should be investing in American technology, we can incentivize that, and they have a benefit, too. Our capital allocators in this economy benefit from living in a free and open society. They benefit from an economic tax system that is the one that this country built. As a result, they should already be incentivized to voluntarily work to invest in American technology, American defense technology, and not in that of the Chinese, the Russians, the Iranians, the North Koreans.

Ranking Member Scott mentioned what's going on today in the Red Sea with the Houthis, he mentioned the ongoing attacks by Iran against Americans in – in Iraq and Syria. We must realize that the war in Ukraine, the potential threats against Taiwan, and Iran's bad behavior in the Middle East are not unconnected.

China is working directly with Russia on its war in Ukraine. It is working directly with Iran on the provision of missile technology. It is working with North Korea on its nuclear program. China is at the heart of all of this. As a result, it is imperative that in this country we work tightly, hand in glove, industry with government bringing the right incentives, the right opportunities, preventing overregulation, ensuring that we work collaboratively to move this country forward.

One last note, it's critical that we build a STEM capable workforce in this country. That means investing in education and basic science research. It also means fundamentally fixing our broken immigration system. The idea that we bring thousands of foreigners this country every year, the most brilliant in the world to be educated and receive PhDs in our universities and then force them to return home to build their companies and invest abroad is ridiculous.

The idea that we have a system based on a lottery is crazy. We should pick the best and the brightest of the world and incentivize them to stay here and become part of the American dream. That is what America always has been. It's what we should be in the future. It is how we will ultimately beat China economically, militarily, and politically.

Thank you for the opportunity to be here today. I look forward to your questions.

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**SHERROD BROWN:** Thank you, Mr. Jaffer. Ms. Gorman, welcome.

**LINDSAY GORMAN:** Chairman Brown, Ranking Member Scott, and members of the committee. Thank you for the opportunity to testify before you today. I come at this issue as a researcher leading a team focused on technology and geopolitics at the German Marshall Fund, as a former policy professional developing allied technology cooperation initiatives, and in a past life as a scientist in the lab conducting quantum physics experiments and building artificial intelligence systems.

I speak here today in my personal capacity. The United States has spent decades investing in, inventing, and reinventing new modes of warfare, modernizing our military in response to new adversary capabilities and threats. In the 1950s, the Pentagon's first offset strategy emphasize building up US – the US nuclear arsenal to offset perceived conventional force disadvantages vis a vis the Soviet Union.

When the USSR gained nuclear parity in the late 1970s and early 80s, the second offset strategy bet on precision strike and stealth technologies. Recently, a third offset strategy sought to reestablish flagging US military technological superiority. Today, the United States' strongest autocratic rival uses tactics in economic, technological and societal realms that a defense first national security apparatus was not designed to counter.

In the PRC, we face a competitor who wields its own economic power to coerce nations businesses and individuals to achieve its technology and national security objectives. This multi-sectoral competition has strained the post-Cold War view of international relations, in which more economic engagement has implied greater political, even democratic proximity.

Much as we have in the past, the United States today must reorient and invest in new capabilities and tools to meet this threat. A key element of this effort is building out a doctrine toolkit and alliances for techno economic statecraft. Some of these tools already exist, but many were designed for a different era when their remit was far simpler in terms of ensuring that technology items with dual use capability, those that could be used for both military and particular weapons of mass destruction and civilian uses, were used for the latter and not the former in countries of concern.

These dual use applications often had clear signatures, uranium enrichment thresholds, for example, signifying use for civilian nuclear power or as weapons grade nuclear fuel. These modes are outdated and unfit for our modern challenges for three reasons. First, straightforward distinctions and thresholds between military and civilian applications of emerging technologies rarely exist.

The same quantum computer that could revolutionize scientific discovery could

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break the encryption that secures our communications with submarines. The same synthetic biology processes that could engineer novel cancer therapies could also engineer pandemic pathogens. And the same computing capacity that fuels large language models can fuel drone swarms and mass surveillance.

Second, the PRC's strategy of civil military fusion further blurs these lines, making it difficult to have any confidence that any civilian use will stay a civilian use. And third, many of today's national security technology risks simply fall outside the military domain such as human rights abuses, the promotion of autocratic values and standards and emerging technologies, and strategic dependencies in critical supply chains.

Outpacing China no longer simply means outrunning the PRC, but also impeding its capabilities and key force multiplier technologies. This will require the United States and its allies to control capabilities, not only technologies. In my written testimony, I discussed the inputs and considerations for controls in AI, biotechnology, and quantum information and provide recommendations along three lines.

First, significantly expand US and allied analytical capacity, including by establishing a National Technology Competitiveness Analysis Center. Second, leverage cutting edge technologies to track and control – to track control evaluations and evasions and bolster enforcement from knowledge graphs and link chart analyzes to databases of Chinese entities and partnerships.

And third, build capacity among US allies and partners on novel techno economic statecraft tools and approaches modeled FIRRMA's CFIUS expansion. Thank you, and I look forward to your questions.

**SHERROD BROWN:** Thank you, Ms. Gorman. To start with, just an observation before I turn to Ms. Kilcrease for a question, Mr. Jaffer said that essentially that we need to incent US corporations not to invest in China. These are the same corporations that lobbied this Congress 25 and 30 years ago very successfully because many of my colleagues like to be at the beck and call of corporate interests because labor was too expensive in the United States, even too expensive in the – the southern – the nonunion south and lobbied for first most favored nation status, they decided that didn't sound very good.

So then permanent normal trade relations with China, US corporations moved jobs overseas, benefited from it. Their bottom line, their stockholders benefited American workers and – and my state, especially in my part of the country, were left behind. Now those same companies, we need to incent them not to invest in China.

I mean, I don't disagree with that, but it's – it's really a pretty remarkable irony of history. Stop there. Question for Ms. Kilcrease and Ms. Gorman. Secretary

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Raimondo recently said the export control budget at BIS is roughly the same as it was a decade ago. You each mentioned that. From responding to China's with an increasing workload, responding to Russia's invasion of Ukraine to a new country wide controls on chip exports, both of you quickly, if you can, two questions.

Can you each describe what resources, technology, information, personnel Congress should provide to BIS to meet its growing export control mission? What are the negative implications of not increasing funding? Start with you, Mr. Kilcrease, and you Ms. Gorman.

**EMILY KILCREASE:** Thank you for the question. It's an incredibly important one and I'll quickly go through what could be a long laundry list on that. But there's a range of needs in the Department of Commerce as well as the other export control agencies. It's not just commerce that the – has responsibility for implementing these.

The bread and butter functions of license applications and export control enforcement absolutely need additional funding. But one thing I talk a lot about in my written statement is that we need to be spending these new resources wisely. We need to be really investing in the evaluation and analytic capabilities so that the Department of Commerce is not just relying on industry input, but has access to a wide range of unbiased information as it's building up its capacity to evaluate and assess whether controls are actually working in practice.

We don't have that capacity. We need that capacity and it needs to be an unbiased kind of independent analytic capability. We need to invest in the international engagement functions so we're not implementing controls unilaterally and we can really put in the political elbow grease to make sure we get partners and allies on board.

And we need to be examining new ways of doing technical export control enforcement. I'll flag some work that my colleague, Tim Feste [sp] has done looking at, for example, on chip governance. It's a way to do smarter enforcement, not just more enforcement. I fear if we don't make these sorts of investments, the export control system will continue to be outdated, it'll continue to be stuck in a kind of a Cold War mentality, and it will continue to fail to capture the emerging technologies that are really at the center of the US-China competition.

**SHERROD BROWN:** Thank you. Ms. Gorman.

**LINDSAY GORMAN:** Yes, I very much agree with Mr. Kilcrease's response and would add that, on the analytical capacity, part of what we're talking about is we do not have the tools to understand the downstream economic impacts to the United States businesses and to China's own capacity development if we

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restrict certain critical technologies today.

We need to make – be making these decisions based on red team blue team analyses, forecasting that projects five, 10, 20 years into the future so that it's not about just slapping a control on one tiny bit of technology, but really trying to limit the capabilities of China into the future and we're making smart investments in those controls.

This is what this kind of analytical center should do. We shouldn't be leaving it to – to companies even – even to researchers to members of Congress. We need the best information available. That also includes robust databases that can draw information from all sources from Chinese financial sources that can track when Chinese entities pop up that are subsidiaries.

They have a strategy now. Once they get put on an export control list, we see five new companies of a similar name popping up doing similar things. We need to be better at automatically adding those entities into our control lists and creating databases and leveraging tools like AI and data science to be tracking those networks of – of smuggling sanctions evasion and these creative ways that China can circumvent our export controls.

And then lastly, on the multilateral –

**SHERROD BROWN:** Quickly –

**LINDSAY GORMAN:** Yes.

**SHERROD BROWN:** Got it. OK. All right. Thank you. Other question I want for you, Ms. Kilcrease. I wanted to ask you about the Casey Cornyn issue of outbound investment. Describe the regulatory gap that outbound investment authority would fill and, if you can, as quickly as possible, why is it important for Congress to enact outbound investment legislation if an executive order already exists?

**EMILY KILCREASE:** Yeah, so I think there's a growing body of evidence that certain US investments in China do present national security risks and there's a gap in the authorities to address these. You know, the most common tool that people will raise is that of export controls, which regulates the transfer of technologies to China and other destinations.

But the problem is that only captures part of the risk. It doesn't capture non-technical information or industrial knowhow that is nonetheless critical for advancing a country's capability in a particular technology ecosystem. The example that I think is most helpful is to think about a semiconductor fab where when you think about what it takes to churn out CHIPS at scale efficiently and on cost competitive terms, that requires complex supply chain management.

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It requires skilled workforce, the recruiting and retention of that sort of skilled workforce. That includes commercial strategies that can survive in a cutthroat environment. None of that is suitable to be captured under export controls, but it is again nonetheless critical for how China will build its capacity.

And it's this exact sort of know how that flows along with an investment and we don't have a tool to capture that currently. So clearly, there's been a lot of debate on this, including in Congress and in the administration. Substantively, I think the administration's executive order is headed in the right direction.

But ultimately, it is far better for these sorts of programs to be codified by Congress, particularly because we have this great example in the FIRRMA [ph] process where Congress was really able to shape and guide and provide appropriate resources to provide a clear legal mandate for what they wanted the executive branch to do. So ultimately, I do think it is incumbent on Congress to act on this problem.

**SHERROD BROWN:** Senator Scott?

**TIM SCOTT:** Thank you, Mr. Chairman for my 10 minutes and I'll start today.

**SHERROD BROWN:** 10? Five plus two equals seven.

**TIM SCOTT:** Well, Washington math, that's 10.

**SHERROD BROWN:** Do you write his jokes?

**TIM SCOTT:** He agrees with my jokes. Thank you, Senator Tester. He's eating away my time by the way as well. So 11 minutes. Thank you, sir.

**SHERROD BROWN:** [Inaudible]

**TIM SCOTT:** OK. Sorry about that. One of the largest pillars in China's campaign of economic coercion is the systematic theft of IP. We have seen it time and again from the corporate world to computing to agriculture. And what I find deeply concerning is that we are now seeing it on our college campuses, university campuses.

I have written several letters to the Biden administration on this subject. And thankfully, my amendment on gifts and grants from Chinese military firms to our institutions of higher education was signed into law in the last year's NDAA. Thankfully, with this report, now the Departments of Treasury and Education will be required to provide a full accounting of the donations that the Chinese military firms are providing to US educational institutions, an important first step in the right direction.

Mr. Jaffer, you're an academic, you're on college campuses. Talk to me a little

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bit about the national security threat that China's influence presents on our college campuses.

**JAMIL JAFFER:** Thank you, Ranking Member Scott. The idea that we would allow Chinese influence operations to take place on our college campuses through Confucius Institutes, through research collaborations and the like is deeply concerning. We know that the Chinese government is engaged in a concerted effort to steal intellectual property, not just through cyber means, although that is the predominant means by which they do it, not just through physical capabilities by putting people in American companies and stealing that innovation, but by stealing core R and D taking place, basic science research in our colleges and universities.

And they're doing that through these research collaborations. Now, there are collaborations that make sense with allied nations. There are collaborations across borders that make tons of sense. But collaborating with Chinese researchers who we know are influenced and pressured by the Chinese government on a regular basis to steal additional property simply makes no sense.

Taking cash money from Chinese companies who have ulterior motives simply makes no sense. No university should do it. And I applaud you, Senator Scott, for having outed the – outed this fact and for calling it out once and again.

**TIM SCOTT:** Well, how do we – if you – if you were in charge, how would you help us stop or reduce the amount of activity on those college campuses? How much further can we go than just the amendment that was a part of the NDAA in spotting it, bringing light to it? In addition to that, we have 300,000 or so Chinese students on our college campuses.

I'm not sure how many report back to the CCP, but it is a concern to me. I'd love to hear your thoughts on that as well.

**JAMIL JAFFER:** Well, look, we always have to be careful to not, you know, tar every Chinese student that's here in the United States with the brush that they're working with the Chinese government. But we have to recognize the Chinese government is engaged in an active effort to bring students here, to bring researchers here to work with American academics here in this country, pay them to transfer technology.

The Thousand Talents program and the like are a few examples of those. Now, in order to ensure that this doesn't happen when we bring students in, bring Chinese nationals in, vetting them, frankly nationals from any country, vetting them well, ensuring they're not a security risk is an important part of that immigration process, including for students and the like and researchers.

At the same time, federal – universities obtain a tremendous amount of federal

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grant money. They obtain a tremendous amount of federal financial aid for their students. Making those pipelines hard to access if they continue to allow their research and development to walk out the back door to China is a very significant penalty you can leverage.

Now, I'm not saying we should do that, I'm saying we need to think consciously about that. At the same time, if – if our universities are allowing this to happen and they know it's happening and aren't taking action to stop it, public and private alike, action can be taken to make their lives a lot more difficult.

**TIM SCOTT:** Sounds like a carrot and stick approach, though. You – you put ourselves – you put the nation and the universities in a strong position to speak clearly and make good decisions with consequences. Without those consequences, to me, it seems like there will be – we cannot reinforce good behavior if all we're saying is please.

**JAMIL JAFFER:** No, that's exactly right. And you know, it goes to universities, it goes to investors alike. All of us have an incentive to do the right thing, right, to invest in American technology, protect our intellectual property, and ensure innovation stays here, right. We should recognize that because we live in this system of governance in this economic system, benefiting our adversaries is actually contrary to all of our interests.

And as a result, universities already have the incentive to do the right thing, investors have the incentive to do the right thing. Providing them more incentives and ultimately only reaching for the regulatory stick when you absolutely have to is ultimately I think the right approach.

**TIM SCOTT:** Thank you.

**SHERROD BROWN:** Thank you, Senator Scott. Senator Menendez of New Jersey is recognized.

**BOB MENENDEZ:** Thank you, Mr. Chairman. Last Congress, I introduced the Economic Statecraft for the 21st Century Act, a bill that provides a comprehensive plan to confront the anti-competitive predatory nature of China's international economic policies. The legislation would allow us to lead to our values by strengthening our supply chains with reshoring – near shoring strategies by achieving our energy related sustainability goals by fostering cooperation in multilateral institutions by building global resiliency, among other things.

So my question Ms. Kilcrease, what effective economic tools do we presently have to have the United States be able to deal with our China challenge? And what, if any, additional authorities do you believe would be beneficial for us in terms of leading our economic diplomacy?



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**EMILY KILCREASE:** Thank you for the question and for your leadership in developing economic statecraft strategy. It's critically important that, as we think about the specific tools, we're also thinking about how all of these tools work in tandem to achieve our goals. And particularly if we're talking about technology leadership and leadership in particular sectors, assessing these tools and how they work together is so important.

You know, I think we have a growing body of tools that are effective. Some of our export controls, our investment screening, these are mature processes where there's always room for improvement, but we have well-established frameworks. We also have robust industrial policy at this point in the US where we're really trying to implement the run faster part of the agenda, trying to invest in our R and D capabilities and strengthen our STEM capabilities as well.

Ultimately, these are all the sorts of efforts that need to move forward in tandem, but that doesn't mean that our work is done of course, right? We're talking today about outbound investment as one of the key ways to protect our economic security interest. We should also be having a conversation around tariff restructuring and how that could potentially be used in some cases to protect against Chinese unfair trade practices.

That requires deep analysis, economic analysis of downstream impacts, but it is one of the areas where we do have a gap and we need to consider, again, whether that sort of approach would advance our interests.

**BOB MENENDEZ:** Thank you. I want to talk about our lack of outbound investment oversight in sensitive industries that has the potential to harm our national security and hamper the competitiveness of US industry because of the technical prowess, capital, and the unique knowhow that access to the US capital markets provide.

President Biden's executive order in August is a good start, but I fear it may be too limited. Ms. Gorman, is the order broad enough to prevent US capital and expertise from financing the wide range of critical sectors that undermine US national security?

**LINDSAY GORMAN:** Thank you for the question. I think the order itself, which focuses on AI, semiconductors, and quantum information system exclusively, I think can be seen, as you rightly point out, as a good start. We may in the future want to look at similar outbound investments on other critical and emerging technology areas.

But this depends on where we have strategic advantages and – and also can mirror our other approaches to controlling technology outflows. We shouldn't be allowing investors to invest in entities that we've determined. We shouldn't be selling those critical technologies, too. But I think the outbound order is taking

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actually somewhat of a targeted approach though when it – when it comes to AI, that’s going to be one of the hardest issues to get right in terms of how broad do we think about what AI is, what’s a military use, what’s civilian use.

These are not easy questions, but I think it’s a good start.

**BOB MENENDEZ:** Well with intellectual property theft, which remains an acute challenge in our dealings with China, and the theft of intellectual property related to cutting edge technologies that could seriously degrade our national security and economic competitiveness, I wonder what can we do to expand on the President’s order to make outbound investment review a more effective tool for limiting the theft of high tech secrets that are critical to national security.

**LINDSAY GORMAN:** It’s a good question. I think we can try to tie in some – some strings to our investments. I think expanding our enforcement capabilities. The DOJ has certainly prioritized the intellectual property theft from China challenge. We need – we need more aggressive enforcement there and to be sure that we’re not giving away the crown jewels of our technology through investments, through that transfer of knowhow.

And I think there – there’s a piece of this, too, that involves communicating to our investors what our priorities are, incentivizing them to make investments in – in allied partner nations, not only China, and raising awareness from them themselves on what we’re really trying to guard against.

**BOB MENENDEZ:** Thank you. Mr. Jaffer. It’s good to see you. Mr. Jaffer was the chief counsel for the Republicans on the Senate Foreign Relations Committee and good to see you here. Thank you. Mr. Chairman.

**JAMIL JAFFER:** Thank you. Senator Menendez.

**SHERROD BROWN:** Thank you, Senator Menendez. Senator Tillis is recognized from North Carolina.

**THOM TILLIS:** Thank you, Mr. Chairman. Thank you all for being here. Mr. Jaffer, I’m going to submit a couple of questions for the record, but I – I’ve tried to explain to people as late as last night. I had a telephone town hall paperwork concerned about China and Chinese investment in the United States and I tried to explain that some of that is not bad.

It’s a matter of where they’re investing. But what I also try to explain is how investment in China, not all investment in China is bad. For example, I – my favorite photo is a little girl wearing a Wonder Woman outfit with a Captain America shield and she’s Chinese. She’s at a Disney park in China. Boy, I want as much Chinese investment as we can to export our culture to China to let the Chinese people see what’s possible in the free world.

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So how do you – how do we strike that balance and not make it untenable for American businesses to see a market of middle class Chinese, which is probably shrinking, giving some of the reducing in size, but it's still about twice our population. How do we strike the balance as a matter of public policy?

**JAMIL JAFFER:** Yeah, it's a great question, Senator Tillis. And you know, it seems sort of obvious, but you know, investing in a T-shirt factory in China is fundamentally different than investing in a semiconductor fab. Transferring technology for, you know, manufacturing that happens at scale of non-technological capabilities is different than transferring manufacturing knowhow for critical minerals or processing for critical minerals.

And so there's a common sense element to the way our investors and our investment community ought to think about investment and business in China. You know, we all made the mistake in the 90s thinking that China being brought into the world – into the – into the, you know, rules –

**THOM TILLIS:** The world supports a democratic free market –

**JAMIL JAFFER:** Right –

**THOM TILLIS:** Framework that never occurred.

**JAMIL JAFFER:** We all bought into that, right, from President Clinton to Republicans in Congress, and we were wrong. China's exploited its interests in that system. It's taken advantage of it. It's – it's playing unfair ball and now it's using that repression that it imposes upon its own people and using the free market system to export that repression abroad.

**THOM TILLIS:** And I'm wondering, I think more broadly, because what we're really talking about here is making sure that China's not successful being the military and economic superpower by 2050. And it seems like if we're really going to talk about that, obviously we have to incent research and development. We have to make sure that the United States remains the innovator that it is today.

We have to protect our intellectual property. We have to do everything we can, but it seems like we need to fight on several different levels. It seems to me that the Belt and Road Initiative, you've got some buyer's remorse there, but we really have no alternative. So to what extent are we going to Africa and – and South America, going to these countries and creating a different value proposition?

We don't have to be the lowest cost provider because we know that an American investment and American framework in these countries means something more to them. And these countries, these leaders get it. So give me an idea, if you could wave a wand and be president for the day, what would be your global strategy, the multi-level strategy to go after China and prevent them from succeeding over

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the next 25 years?

**JAMIL JAFFER:** Well, I think, Senator Tillis, the first step is we have to be the strongest ally to our friends and the fiercest adversary to our foes. Today, our adversaries aren't afraid of us. They know we're afraid to take action in the world and our allies aren't sure we'll be there with them.

**THOM TILLIS:** And so failure, I – would you argue that failure and Ukraine is the one thing China hopes happens this year?

**JAMIL JAFFER:** Absolutely. Continued attacks by Iran without – without an effective US response makes China happy. North Korea launching missiles without us doing anything about it makes China happy. These things are not unrelated. China has a hand in all of this. They're working collaboratively with all these nations.

They recognize that a weak US that either appears weak or is actually weak benefits them.

**THOM TILLIS:** And do you – I mean, it's topical because of discussions we're having here around the supplemental and Ukraine funding. Could – could – do you believe that Putin will be happy and Xi Jinping will be thrilled if we de-commit from Ukraine? And then what likely will occur there? I mean, do you – do you think it's in that order that China sees more to gain from our lack of funding than – than even Putin?

**JAMIL JAFFER:** Absolutely. And the way you know that is that we saw Xi Jinping stand with Vladimir Putin and an aide he knew was being captured by the cameras says to Vladimir Putin, there are changes of the likes of which the world hasn't seen in we decades. And we, Russian and China together, are making those changes happen.

**THOM TILLIS:** The last thing, I could talk to you for more than a day, but – but the – the last thing there, the fact that China came to the United States, the fact that Xi Jinping came to the United States means that he and the economy and the CCP is on the ropes, right? And when they're on the ropes, you keep them there and you keep them in a corner.

And one of the ways you do that is to step up and lead and I think leadership means that we provide supplemental funding to Ukraine. Thank you.

**JAMIL JAFFER:** I totally agree.

**SHERROD BROWN:** Senator Tester of Montana is recognized.

**JON TESTER:** I want to thank the chairman and the ranking member for having this hearing. I want to agree with Senator Tillis' line of questioning and I

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appreciate your response. I want to thank all three of you for your testimony. Leading is something that's really important. We had an opportunity to do some things in last year's NDAA. The ranking member and the chairman both talked about this.

The House blocked every damn thing we tried to do, whether it was the FEND Off Fentanyl bill that we had a hearing on last week that would have held Chinese entities accountable, passed this body by a number that we never get numbers like that. In the high – in the 90s, or whether it was an amendment led by Senator Rounds and myself that would have stopped China and foreign adversaries, the ones you mentioned, Mr. Jaffer, North Korea, Iran, and Russia from buying farmland, which was also blocked by the Republican leadership in the House.

I'm going to tell you obstruction, it doesn't take anybody with a brain to do obstruction. And so it's obstructionism is the – as is the rule of the day. The House is doing it and they're doing it really well to the destruction of this country. I'm a farmer. People – most people understand that food security is national security.

If you want to screw up a company – screw around – a country, screw around with their food supply. Recently, we just got a word that Chinese national bought 200,000 acres of land in Oregon. We didn't know about it. That means our system doesn't work. That means self-reporting doesn't work. These folks don't want to self-report.

And so we've got some work to do here. But doggone it, this shouldn't be a Republican or Democrat or House or Senate. This is the United States of America and so keeping our country safe, not allowing China to spy on us is – is really, really important. There's been a lot of talk about exploiting American innovation here today, and it's a fact and we need to make sure that that we stop that from happening.

When the – when the spy balloon that went over the United States was shot down, there was some – there was some information that was delivered that they used some technology that was bought in this country. I could ask all three of this, but I'm going to ask Mr. Jaffer. Some of this stuff was pretty simple.

Some of it was more complicated than simple. Is there any way to stop this kind of stuff from happening? Is there anything we can do? And after he gets done, if you other two would like to respond, you can.

**JAMIL JAFFER:** Well, Senator Tester, you know, there is a spot of hope in the House. You have Chairman Gallagher and Ranking Member Krishnamoorthi who've done a lot of great bipartisan work together on the China Select Committee to move initiatives forward. Now, there are challenges with leadership

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and challenges getting, you know, the bipartisan group there together in the House.

But there are opportunities, I think, to work and to get some of this stuff done. I think the nation is waking up to the China threat. You mentioned the sale of certain technologies that are end up in Chinese equipment. You know, it's – it's crazy that American parents buy Chinese drones for their children for Christmas.

You know, we've got to work to ensure that the American people are well educated about this. And by the way, they are – you go to – I was just in Iowa a few weeks ago and Iowans are worried about what you talk about, the purchase of farmland by Chinese corporations. They're deeply concerned about that and you're exactly right.

I think there are opportunities. The American people are there, it's now bringing our businesses and our industry and our government together with where the American people are to say this is not an acceptable situation. We cannot function in a world in which American technology goes into Chinese spy balloons or Chinese corporations are allowed to buy American farmland or, frankly, land around our airports, our military facilities, and the like.

It's not acceptable. It has to stop.

**JON TESTER:** Correct. Anybody else want to respond to that? OK.

**LINDSAY GORMAN:** Sure. I would – I would just add I think there is a reason for optimism, and public engagement can go a long way. One issue that we've tracked extensively, as I know many here have as well, is the issue of information platforms such as TikTok operating in the United States. Four years ago when we raised these concerns, I think we were laughed out of the room.

What is – who cares about a meme app? Who cares about cat videos? This isn't a national security threat. Today, the – the most recent Pew Research poll from last year found that now over six out of 10 Americans now view TikTok as a national security threat. That is public education in action. And so I think there is promise.

**JON TESTER:** OK.

**EMILY KILCREASE:** Yeah, I would just add, we keep getting caught short by these sorts of examples, whether it's the spy balloon or TikTok or BGI or whatever the specific Chinese company is. And that means we've got a blind spot in our analytic capabilities. I mean, we don't understand what's happening in China's technology ecosystems at the level that we should.

And so as we think about how to strengthen our tools, you know, that is an area

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we should be prioritizing. Do we have experts in the government who have access to both classified information and a wide range of open source information that really know exactly what's happening inside of China's tech ecosystem.

**JON TESTER:** Really quickly, I'm – I'm a farmer. Self-driving tractors have been around for about 15 years. I finally got to a point where I was going to buy a piece of equipment that would allow that tractor to drive with me sitting in the cab. Every company I called was Chinese and the people I were talking to was in mainland China.

And finally, I found an American company and you know what he told me? He said – I told him what I just told you guys. And he said, yeah, they stole our equipment and remanufactured it. We got to do something about this and we got to remove the stupidity that's going on over at the House.

**SHERROD BROWN:** Thank you. Senator Tester for – always for your wisdom, born in being a real farmer. So thank you. Senator Hagerty of Tennessee is recognized.

**WILLIAM HAGERTY:** Thank you, Chairman Brown. On December 20th of last year, Gary Peters and I, Senator Gary Peters from Michigan, and I introduced a bill to prohibit US taxpayer dollars from going to companies like BGI. They would use this funding to gain access to the US market and, importantly, gain access to American citizens DNA, DNA data I should say, their genetic data.

I want to thank Senator Peters for working with me on this. He's prioritizing this bill for this month's committee markup. I look forward to getting this passed to deal with this fast moving threat. I think all of you know this, and BGI is the largest collector of genetic data in the world. BGI stores this data in China's National Gene Bank, which is directly managed by BGI and it's owned by the Chinese government.

BGI has analyzed some of this data that it's collected using supercomputers that are built and operated by the Chinese military. What concerns me here isn't just the collection, the storage, and the analysis of this highly sensitive data. It's also China's ability to use this trove of biological data and other life sciences data to train advanced dual use artificial intelligence models perhaps for malign purposes.

So Ms. Gorman, I'm going to start with you. My question has two parts. I've heard from many AI professionals regarding the risk of China having access to massive life science training data. What in your opinion is the greatest national security concern regarding BGI's access to this? And what could the Chinese government do with troves of US genomic and other life sciences data when you couple it with advanced AI models?

**LINDSAY GORMAN:** Senator, thank you for the question. Really, thank you

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for your leadership and raising awareness of these issues on genetic data and genomic data. I think there are a number of maybe doomsday scenarios that experts would point to, personalized bioweapons for example that could be designed. What I'm more concerned about are two things.

One, that these – DNA information is some of our most sensitive information and we already know that the PRC has an ethnic mission to remake its population in favor of its Han Chinese population and committing massive human rights abuses on its ethnic Muslim populations like the Uyghurs. DNA surveillance can put that on steroids.

Second, there's a competitiveness worry here. These technologies are the future. Personalized medicine, individualized medicine, combining biotechnology and artificial intelligence, these are where our future therapies are going to come from. And I don't want them to come exclusively from China. So I worry that they're amassing these – these databases and we – because we won't collect DNA on our own citizens, and nor should we, we might fall behind.

**WILLIAM HAGERTY:** This is to any of you that want to respond to this, but what do you think Congress should do to prevent China from gaining access to this type of life sciences data that could be used to train dual use AI models?

**EMILY KILCREASE:** You know, I think there's a range of tools that Congress could consider. It's worth just emphasizing a point that Ms. Gorman made. You know, genomic data is particularly sensitive. If somebody steals my password, I can change my password. I can't change my genomics or my genes. You know, and so we should be looking at a heightened level of sensitivity and heightened level of protection, precisely because of the nature of this sort of data.

So a range of things that we could think about, certainly US taxpayer dollars should not be going to support the growth of Chinese national champions in this space.

**WILLIAM HAGERTY:** Agreed.

**EMILY KILCREASE:** Of course, we should be thinking about their access to our US domestic market. You know, a weak spot in our economic security toolkit is Chinese access to the US domestic market. That comes up in the ICTs space. It certainly comes up in this space as well.

**WILLIAM HAGERTY:** Senator Peters and I are trying to get at that.

**EMILY KILCREASE:** Exactly. And the last point I would add is there is a broader conversation about the bulk transfer of any sort of sensitive US person's data overseas to foreign adversaries. We simply don't have a legal authority that allows us to prevent that, and that is a real national security risk.



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**WILLIAM HAGERTY:** I think we should take a hard look at that. I'd like to stay with you, if I might, Ms. Kilcrease. I want to shift gears to talk with you about Nippon Steel's proposed acquisition of US Steel. You've publicly stated that you'd be shocked if the deal got blocked. You're a former senior staffer at the Committee on Foreign Investment in the US, CFIUS. Could you walk us through the foreign investment review process and explain why you believe the deal would be unlikely to be blocked for national security reasons?

**EMILY KILCREASE:** Sure. And I'll focus my comments really on the CFIUS legal framework and how CFIUS typically views risk assessments in these sorts of transactions. You know, CFIUS under its mandate from Congress is laser focused on national security risks, but its concept of national security can be flexible. It can include economic factors.

And so for a transaction like this that involves a critical component for our defense industrial base, I would expect that they would be looking, certainly, first of all, they will – they will look at the deal, right? It's a big deal. It's a significant deal. So there's an interest to review the deal in the first instance.

But as they're thinking about risk, they'll be looking at how the transaction would affect domestic production and domestic availability of steel, particularly the sorts of steel that are important for our national security platforms. They may also be looking at the workforce available to support that continued production.

If there is a problem there, CFIUS has a range of authorities that can use to impose mitigation terms on the deal. That's typically how CFIUS in past practice has addressed those sorts of economic related concerns to the extent that they rise to the level of a national security risk.

**WILLIAM HAGERTY:** Can you apply them to this instance then?

**EMILY KILCREASE:** So with the caveat that I don't have access to all of the deal information, you know, my sense is that if they – they did think that the acquisition was likely to lead to these negative sorts of impacts on US domestic steel production that it is very possible that there would be a mitigation agreement that would be either negotiated with or imposed on the companies to address those and to make sure that those aren't those negative impacts.

You know, the comment that I made that you quoted that I'd be shocked if the deal actually got blocked is simply because we typically – CFIUS typically doesn't block those sorts of deals or doesn't recommend that the President blocked those sorts of deals based on past practice. The fact that it's Japan and not China making the acquisition I think will be relevant in their consideration.

I think there will be an incentive to, you know, consider the alliance aspect in their review as they move forward.

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**WILLIAM HAGERTY:** Thank you. Thanks, Mr. Chairman.

**SHERROD BROWN:** Thank you, Senator Haggerty for exploring that. Senator Warren – Warner from Virginia’s recognized.

**MARK WARNER:** Thank you, Mr. Chairman. And thank you for having this hearing. And Ms. Gorman, it’s good to see you. I’ll quickly address one of the things you mentioned about TikTok. I do think it is a national security concern. I think we’ve – it is remarkable though what the power of money buys in this town. When we had broad based bipartisan support on a comprehensive approach that would not only take on TikTok but a framework for threatening technology from adversarial nations, it was almost looked like it was going to be too easy at first.

We – we had 26 senators evenly divided support from the administration, support from lots of industry to have this organized approach, which – so it wouldn’t be a one off. Bytedance then dropped \$100 million on getting folks from the far left and the far right to come out against our approach. They literally bought up advertising.

Every political tip sheet in DC was sponsored by, for weeks on end, by TikTok, and I think this problem has not gone away and we need to revisit it now more than ever as we see TikTok and I – unfortunately, I think the CCP play out their agenda using TikTok because it’s a news delivery model. I want to talk a little bit though about another area on – on open source.

Open source has played a huge role in things like software development. For years, we’ve seen it play a role in semiconductor architecture, AI models, AI development models. It’s one of the reasons why I’ve worked with Senator Kennedy on this committee on a bill, Senate Bill 3554, The Financial Artificial Intelligence Risk Reduction Act that goes after some of the challenges around AI in the financial markets where I think we have huge, huge vulnerabilities.

I wanted to get the plug in on my bill and I’ll come back to open source now that that, you know, there’s a lot of value in open source. But I’ve been – when we look at some of the projects like the risk five initiative, how the PRC is using that in the semiconductor area to gain information. And maybe just go down the aisle, starting with Ms. Kilcrease, how do we – how do we do – you know, there’s value in open source, there’s a lot of good research going on in open source.

But how do we better educate American companies that many times through some of these open source projects were basically giving away the crown jewels for free. I can tell you sitting from the chairman and the Intelligence Committee, we see China prey upon these open source opportunities all the time. How do we do a better job of getting companies to understand that risk?

And I’ll take each of – each of you.

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**EMILY KILCREASE:** Thank you for the question. It's a really hot button issue in certainly the chip space and in the AI space right now about how to think about open source models. You know, it's important to recognize upfront that this is exactly the kind of tactic that China would use to circumvent ever increasing levels of controls.

If they can't get the chip directly, if they can't access control design technology, they will of course look for what is available on the open market through either illicit or illicit means. Now, there are benefits to the open source approach and certainly some of the safety researchers will tell you that there are some benefits to having the public being able to access and test these sorts of open source models.

However, it really does depend on who is doing that right. And so as we think about trying to make these trade offs and these balances, I do think we need to have a more serious conversation on controls on the release of some of these models, particularly the really powerful frontier AI models where we don't even know what those things are capable of yet.

And so whether that's putting parameters around AI models with a certain computing power, a compute function, really just trying to put in place some common sense guardrails that maintains a level of openness so we can get those innovation and public safety benefits while also making sure that those sorts of models do not go to adversary countries.

**MARK WARNER:** Mr. Jaffer?

**JAMIL JAFFER:** Thanks, Senator. Look, I think there's a challenge when you think about putting the kind of restrictions on that we're talking about, this idea of open source models that have a certain size or certain compute power. We don't know what those technologies can do, but we also don't know the benefits they can offer us. So I think artificial limitations at a time could be a mistake.

I think the right approach instead is to take a more comprehensive look across the board and realize that our system benefits from having both open source capabilities out there as well as private proprietary software. And that we work best in an environment where both operate in parallel and there are open source capabilities that are out there.

Those tend to be less powerful. You'll find the primary models will likely be more powerful and more capable and ultimately, because they're able to make more money off those, will be able to sell those at higher rates. And so you'll see more investment heading towards proprietary capabilities. But shutting off the open source environment, I think would be a mistake.

Just like putting artificial constraints on – on models based simply on the

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compute power and the like –

**MARK WARNER:** I'm not suggesting necessarily shutting off. But I am thinking we ought to be go in eyes wide open –

**JAMIL JAFFER:** Absolutely –

**MARK WARNER:** And I fear sometimes some of the companies involved don't recognize that. Ms. Gorman.

**LINDSAY GORMAN:** Senator, it's great to see you, too. And I agree that heading into this historic election year with the TikTok election is disastrous. On the open source question, we have to take it back to what are our national security objectives. And here I would actually put forward that we should look at the applications.

We are going to see specialized models that are application specific, large language models, processing text is just about one of these examples. We're going to see the large language models for our – our immune system, the large language models for manufacturing data, which of those application areas have a national security sensitivity that we don't want that to be open source.

And I would also add that there is an advantage of open source beyond just our innovation advantages, but there's actually a strategic advantage, which is that we benefit from the fact that GitHub and open source platforms and software engineering, they're written in English that English is the Lingua franca of software development and Chinese engineers publish in English.

I don't think we should cede that advantage as well because China is also developing their own open source models and open source platforms and databases and that isn't actually an area for competition as well.

**MARK WARNER:** Thank you. Thank you, Mr. Chairman.

**SHERROD BROWN:** Senator Vance, from Ohio is recognized.

**J.D. VANCE:** Thank you, Mr. Chair. And thanks to you and Ranking Member Scott for hosting the hearing. And thanks to the three of you for being here. I want to direct my questioning to Ms. Kilcrease. In particular, I want to ask you about a live situation, the – the Nippon Steel acquisition of US steel, and something that I – I know a number of my colleagues from both sides of the aisle have expressed some concern about and I've shared those concerns.

In fact, I wrote a letter months ago worried that the – the US Steel Board would entertain foreign bids, even though I think it's a bad idea for a host of reasons we can get into. But you know, one of my concerns here is that the interest of foreign bidders in US steel is not primarily about greenfielding investment into

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the United States of America.

They're not expanding steel production domestically, and they're not necessarily doing it because they have better access to capital. They're doing it primarily as a sort of tariff arbitrage. They're effectively buying access to the domestic markets in a tariff free way. And you know, I think that in a – in a world where, first of all, we're talking about one of the most protected industries, steel, in the world, pretty much every – every country that has a steel industry has significant protections placed on it. And we've learned the hard way over the last couple of years that America's capacity for manufacturing and some of the most critical weapons and other things is – is actually pretty lackluster given our needs.

I worry about what this means for our country. And I wanted to ask you know this – this question. So am I right, Ms. Kilcrease, that the only real tool or the only real organization that could review this transaction would be CFIUS?

**EMILY KILCREASE:** That's right. CFIUS is the one that would review this foreign investment consistent with its national security mandate. There may be antitrust as well, but it's basically CFIUS at this point.

J.D. VANCE: And we're expecting a CFIUS review on this particular transaction, correct?

**EMILY KILCREASE:** We are. And there's been public statements to that effect, yes. Yeah.

J.D. VANCE: Got it. So here's my question, CFIUS is primarily or maybe exclusively in national security standard that it applies to reviewing these transactions. Can CFIUS consider public interest concerns as part of its review?

**EMILY KILCREASE:** It cannot. So CFIUS is a national security test. It's a broad and flexible concept of national security. But if the concern, for example, is whether foreign investors are trying to get around tariff structures, it would be unusual for CFIUS to take action on that basis. And we probably don't want to encourage the bureaucracy to kind of get outside the four corners of the legal mandate it's been given by Congress.

J.D. VANCE: Yeah, I agree with that. I guess part of my question is whether that we think that the four corners legal mandate here is a little too narrow for what we're concerned about and what we're interested in. What – what do you think – I mean, if – if we wanted to empower our government to, you know, ensure that we had things like sufficient native domestic production of steel, what do you think we might maybe should do here?

You know, if you were sort of, you know, legislator for a day and we wanted to further empower the Congress to protect, and I use that word intentionally, the

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domestic steel industry, what do you think we should be doing differently vis a vis transactions like this one?

**EMILY KILCREASE:** So if there was a desire to have authorities on more of a public interest test for our foreign investment reviews, certainly that would require additional legislation. That – that’s – that’s a gap. If the policy objective is to protect those sorts of domestic industries apart from distinct national security concerns, we don’t have a tool to do that today.

So you would certainly want to consider whether there’s a need for additional legal authorities as well as considering the impacts more broadly on downstream industries and broadly across the economy for that sort of proposal.

J.D. VANCE: Great. Appreciate that and – and, you know, maybe my office can follow up on some ideas on that front because I do think it’s important. And I know just on this point, just to pontificate a little bit, there’s been some concern, some pushback on my view that, you know, you shouldn’t be worried about Nippon Steel buying US Steel because Japan is an ally and Nippon Steel appears to be a very good company.

I don’t disagree with that. I think it’s important to sort of point out that the Japanese are – you know, it’s a great country, great people and they are an important ally. They also are fundamentally in the sphere of influence of China. You can imagine a scenario where domestic steel needs would fall by the wayside when you have an international company that owns those – that owns those rights and owns – owns those production mandates.

So just because they’re an ally, I think doesn’t mean we shouldn’t be concerned about a foreign competitor buying up one of the most important industries, one of the most important companies for a very, very critical, not just national security, but full American interest company. So with that, I’ll yield.

And thanks to the chairman for giving me some time.

**SHERROD BROWN:** Thank you, Senator Vance. Senator Cortez Masto from Nevada is recognized.

**CATHERINE CORTEZ MASTO:** Thank you. Thank you, Chairman. And I want to thank the chairman and ranking member. Another incredible hearing today on an important topic. Every – all three of you, thank you. Giving us pause to question where we need to move forward and where the gaps are and what’s working well. Let – let me – and let me, Mr. Jaffer, start with you because I couldn’t agree more.

We’ve got to start thinking we bring those jobs back here. We bring the manufacturing, the processing back here. Here’s an area that, for me, and I’m –

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I'm from a mining state, the state of Nevada, and I've watched China as they have cornered the market on mining. And China currently controls about 90 percent of global rare earth mineral processing and rare earth magnet manufacturing.

And that was not just by chance, right. Last month, China announced an export ban of rare earth extraction and separation technologies. Between this action and it's a recent export ban on other minerals like graphite, gallium, germanium, it's clear China is threatening to weaponize areas where it has dominance over critical supply chains for the benefit of the public.

If they're listening, there's not any rare earth mineral mining except maybe one place, and that's Nevada and California. So that's why Senator Mullen and I have legislation to strengthen the domestic rare earth magnet supply chain and bring that extraction, the processing, manufacturing these critical minerals back here to the US. I hope my colleagues join us in this legislation.

But my question to you is how should the US be thinking about our own export controls in light of these moves? We've had conversation. What else have we not talked about today?

**JAMIL JAFFER:** Well, you know, Senator Cortez Masto, I think it's critically important the issue you raise, this idea of critical – critical minerals, strategic metals, rare earths, the fact that we don't have access to those here in the United States, the fact that we could get access to it but our own environmental laws, our own – our own willingness to move our policies in the direction of making ourselves independent from China on those is part of the problem.

And it's not just the actual minerals themselves. Even when those metals come from abroad, we can't process them here because we don't have the capabilities, our environmental laws and other laws make it hard for us to do that in the United States. We've got to incentivize businesses to engage in both mining, extraction, and processing here in the US if we're going to free ourselves from this capability.

And then going beyond that, I think that what we have to realize is that your – to your point, this was not a mistake. This is not by accident that China ended up with – with a huge portion of the world's capabilities in processing and obtaining and extracting minerals. They are making these moves in a range of other industries as well, whether it's semiconductors, access to data, artificial intelligence and the like, high performance computing, accelerated computing.

We need to be – recognize that China is strategic. They have a 20, 30, 50, 100 year view of the world. We operate – what makes us so innovative is we operate on a every month, every year, every quarter view of the world and that makes us rapid and innovative. At the same time, we have to recognize that we are

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contending with an adversary that has a generational view of the problem.

We need to take a generational approach. That means working closely with our allies. It's on shoring and ally shoring, and recognizing that our allies have a choice to make. If Europe is not with us, they don't succeed. They need to understand that Europe coming after American companies is a huge mistake.

It doesn't benefit us, it doesn't benefit them and it harms all of us in the long run against China.

**CATHERINE CORTEZ MASTO:** And would you agree that China is taking advantage of the partisan bickering that's happening in Congress right now?

**JAMIL JAFFER:** 100 percent. The partisan bickering happening in Congress and the partisan bickering happening in our country. The fact that we are divided as a nation on issues like Ukraine, on issues like Israel, on issues like America's role in the world is a benefit to China. We need to get on the same page. It needs to be America leading the world and it needs to happen as soon as possible.

**CATHERINE CORTEZ MASTO:** I agree this. This is for the panel because there's another area, and I so appreciate this conversation. It is a challenge for us to quite honestly get anything done, right? There's some good things that we've talked about, that we've done. There's more that needs to be done. Let me just bring one of them to you and get your thoughts on this.

This is the idea of privacy. So the director of the White House's Office of Science and Technology Policy said that federal privacy legislation must work in harmonization with Congress's forthcoming legislation to create guardrails on artificial intelligence development. We are having this conversation about AI. I absolutely agree.

We need guardrails. We need to figure this out, but there is an idea that we also have to address privacy, privacy security. Now I have legislation that I have introduced four years ago. There's legislation out there my colleagues have introduced on privacy and security. Has not passed. We have not moved forward as we've watched the states – some states do it, we've watched European Union.

So I guess my question to all of you is how important is it for us not just to address the AI and the challenges we're facing there, but also address this idea about privacy and privacy data and security? Would you agree that they need to be harmonized?

**EMILY KILCREASE:** Absolutely.

**LINDSAY GORMAN:** Yeah.



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**EMILY KILCREASE:** Oh, sorry.

**LINDSAY GORMAN:** No, go ahead.

**EMILY KILCREASE:** It's such a huge national security risk. You know, as you think about the future that our children are growing up in and the lives that they're living online and the fact that that is data that can be scooped up and sold to the highest bidder, it's terrifying. It's not in the public interest. It should be a high priority for Congress.

**JAMIL JAFFER:** I think there's a real call to do something on privacy. I think the challenge is we need to avoid making the mistakes the Europeans made. They passed comprehensive privacy legislation. Everyone says we're behind Europe. But the reality is that our innovation system functions because we're not passing the kind of overweening, over regulatory laws that the Europeans are doing.

In their privacy laws, they made it harder to achieve noble and novel cybersecurity initiatives as well. So we've got to make sure we act – we act, you know, cognizant of the implications of these laws might have. It is a problem that we have various states doing this. We're going to need federal comprehensive legislation.

The question is what does it look like and what does it need to do and what – what national security interests do we need to account for in that, including our ability to collect foreign intelligence in the United States, you know, an issue which is now before the House and the Senate expiring here in April.

Critical legislation we need to pass and get – get back into law.

**LINDSAY GORMAN:** Yeah, privacy is a core democratic value. It is the bedrock of freedom of expression and assembly. It's – it's a travesty that we don't have federal privacy legislation and it exposes us to other data security risks with some of these Chinese ICTS platforms that are exacerbated by our lack of a baseline protection of individual data.

I would also add in the AI conversation, there are technologies that are in development that would actually allow us to help preserve some of that privacy. I'm talking about privacy preserving AI, privacy enhancing technologies where, with AI, the issue is that the best AI models are trained on massive, massive amounts of data and that's inherently, when it's personal data, a potential privacy violation.

But there are technologies in development that would allow us to train these models without compromising the privacy of individual data. And I think we need robust investment in the advancement of those capabilities as well.

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**CATHERINE CORTEZ MASTO:** Thank you. Thank you, Mr. Chairman.

**SHERROD BROWN:** Thank you, Senator Cortez Masto. Senator Britt of Alabama is recognized.

**KATIE BRITT:** Thank you, Mr. Chairman. Thank you to all of our witnesses for being here today. Mr. Jaffer, as a former staffer to a former staffer, welcome. We continue to be reminded of the national security and economic implications of the Chinese Communist Party and the threat that they pose, both to our country and to our future.

Time and time again, the CCP has shown that they are not willing to play by the rules that govern international commerce. They have aided and abetted Iran evading US sanctions and are actively stealing US technology and intellectual property across whole sectors of our economy, from artificial intelligence to computing to robotics to biology and beyond.

In fact, the FBI's economic espionage caseload related to China has increased approximately 1,300 percent over the last decade. Today on average, a China related counterintelligence investigation is opened every 10 hours. The stakes could not be higher. We must act now to mitigate the ongoing economic harm happening to hardworking American families, Main Street small businesses, budding entrepreneurs, and critical industries.

To that point, we must stop the CCP from buying US land, not only is this impacting the availability of fertile farmland for our agriculture community, but the CCP has deliberately compromised national security by purchasing land near our military installations. That's why I'm proud to have joined Senator Tom Cotton and introducing the Not one More Inch or Acre Act, and I continue to earn my colleagues to join this effort.

The US has also – looking at existing tools that protect our national security and safeguarding technology innovation happening on college campuses and research and development labs and facilities across the nation. We've taken a look and we're looking at what the CCP is trying to do to undermine those things.

The Committee on Foreign Investment in the United States, in addition to export controls classifications and security clearances and sanctions, all contribute to the firewall protecting American innovation, American IP and American research from the Chinese Communist Party and other nefarious actors. Mr. Jaffer, I'd like to ask you where are the gaps in our current toolbox and how do we ensure that US security capabilities are able to keep up with evolving tactics by – and technologies that are being deployed by the Chinese Communist Party to steal our cutting edge – our cutting edge, our groundbreaking technology, the research and innovation that's happening here in the US?

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**JAMIL JAFFER:** Well, Senator Britt, I think there's a few things we could do to help staunch the flow of US intellectual property out the back door. One, we've got to deter effectively the Chinese. That means taking the fight to them, right? We have allowed the NSA and our – and our Cyber Command to get more aggressive and to lean forward to defend forward in adversary networks.

More needs to be done there. We need broader authorities to allow our government to push back more aggressively. We need to take the policy decisions to actually push back against Chinese depredation and the – and the efforts that that other nation state actors like the Iranians and Russians are doing on our networks as well.

Second, we also need to ensure that we have the policies and procedures in place that allows effectively push back economically against the Chinese. Today, we use tools like the SDN list, the entities list. These are not tools that are designed for the kind of economic deprivation they engage in. We have either a sledgehammer on one side or a scalpel on the other.

Neither works. We need a butcher knife. That requires action by Congress to give the administration more tools and then the administration needs to use those tools and use them effectively. Simply designating a group like the Houthis as a specially designated global terrorist and not using the FTO designation is a mistake.

**KATIE BRITT:** Couldn't agree more.

**JAMIL JAFFER:** Exactly. And so – so – so we need to be more aggressive and it's not just in capabilities and tools. We have to use them more aggressively. We've gotten two use – only use economic tools. They're not as effective as they could be. We need to get more aggressive in that front as well.

**KATIE BRITT:** Listen, while we're talking, I know I only have a less than a minute, I want to talk a little bit – transition a little bit to into BRICs. And when I am looking at what I am – I am seeing, obviously, we've had four more countries. We saw four or more countries join us earlier this month. Over 40 countries have expressed interest in joining BRICs and 22 of them have formally requested membership.

I think this is startling and concerning and I think America, we need to wake up. And I think we need to demand that people withdraw from BRICs. And – and my question to you is, in your opinion, has the US adequately examined the consequences and economic concerns and potential national security implications of BRICs? And what more do we need to be doing to push back on this?

**JAMIL JAFFER:** We have not done nearly enough. And the reality is that we are in something of a cold war today with China, right. We have to view the

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Chinese effort to consolidate its influence and authority over nations in our own hemisphere as well as in African around the globe as a strategic threat to our ability to continue to lead the world.

And that comes from us being a strong adversary or foes and a strong ally to our friends. Nobody trusts the United States today. They don't trust that we're going to be there. They saw what we did to our allies with the Kurds under the prior administration. They saw what we did to our allies in Afghanistan under the current administration.

They have seen it over and over again. They see our adversaries punch at us with Iran, with China, with Russia, and they see us take those punches and do little to confront them. Until we demonstrate that we are prepared to lead and be a good ally to our friends and a real average of foes, nobody's going to come alongside us. BRICs will continue to grow, China will continue to gain influence, and countries in our own hemisphere will switch their recognition from Taiwan to China.

It's happened twice in the last six months.

**KATIE BRITT:** Yep, it's a huge and strategic threat –

**SHERROD BROWN:** Thank you, Senator –

**KATIE BRITT:** So thank you so much. I appreciate it.

**SHERROD BROWN:** Thank you, Senator Britt. Senator Warren from Massachusetts is recognized.

**ELIZABETH WARREN:** Thank you, Mr. Chairman. Every time you log on to a website, Big Tech companies collect extremely detailed data about your spending habits, your physical location, your health status, your political beliefs, your religious beliefs and more. And every 30 seconds, Big Tech companies auction off that data to the highest bidders here and around the world.

Now, Americans data are broadcast in this way, a 107 trillion times, that's trillion with a T, every year. This doesn't just pose a risk to Americans privacy. It also poses a risk to our national security. Reports have found that some buyers of our data build huge dossiers of extremely personal information about US government officials and military service members.

They then turn around and sell that information to companies in China and Russia where the Chinese and Russian governments can access it without our – even knowing anything about it. Mrs. Kilcrease – Ms. Kilcrease, you've spent years in government service working on issues like data security policy. So when China or another foreign government gets their hands on our data, what can they

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do with it?

**EMILY KILCREASE:** Well, nothing good comes out of that situation, Senator Warner [sp], so thank you for the question. There's a range of national security risks that can arise from the unfettered transfer of that sort of information on US citizens. To take one example, there's certainly been public reporting about Fitbits on US soldiers being used to enable the movement of our troops.

That's a clear national security concern. And when you think about the types of personal information that's available online and can be collected and sold, as you note, you can think about enabling blackmail. You can think about enabling cyber exploits. It's just a massive counterintelligence concern, essentially, when that level of information is for sale on the open market about individuals who are in these sensitive positions.

**ELIZABETH WARREN:** But Big Tech tells us that it is helping us when they sell or store your data however they want, wherever they want because it will improve your long – your online shopping been an experience or they claim it will help keep your data safe. In reality, the only winners are foreign governments and the tech companies themselves.

Harvesting more of your data means you get more targeted ads and Big Tech gets more revenue from those ads. And as part of the bargain, foreign governments, our adversaries get access to compromising information about US military and government personnel and their families. Now, Congress and the Biden administration have plans to address those risks.

And Big Tech companies know this. That is why they are hijacking our trade agreements to slip in provisions that would prevent policy makers from limiting Big Tech's ability to transfer our data wherever they want. Now, the Big Tech lobby likes to say, don't worry. Congress could still act to protect Americans data under certain exceptions things like if there is a "legitimate" policy or national security need.

Ms. Kilcrease, in theory, the exceptions that Big Tech companies want us to rely on would give policymakers some ability to override the data provisions that Big Tech slips into trade deals. But of the 48 times that countries have invoked a public policy exception at the World Trade Organization to protect their domestic policies, how many times has it actually worked?

**EMILY KILCREASE:** You know, I think when those sorts of public policy exceptions are raised in the WTO context, not speaking for when the US government raises it because presumably we are always acting with legitimate public policy and national security interests in mind, but I understand that the number is fairly limited in terms of the ability to –

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**ELIZABETH WARREN:** Do you have to know the actual number?

**EMILY KILCREASE:** I believe it may be two, ma'am.

**ELIZABETH WARREN:** Two. So twice out of 48 times this exception has actually been worked. Just two times. I got to say I don't like our chances on using this exception. And the national security exception is no more reliable. Trade law tribunals have consistently ruled against the US's use of this exception. Unaccountable trade tribunals should not decide who gets access to information about American soldiers and about our national security.

And Big Tech companies cannot be allowed to co-opt trade policy for their own benefit, especially when that means continuing to allow the Chinese and Russian governments easy access to personal data about US government officials in our military, putting our national security at risk. American data policy should be decided by the American people through their representatives right here in Congress, not by trade tribunals, not by trade negotiators, and certainly not by Big Tech.

Thank you, Mr. Chairman.

**SHERROD BROWN:** Senator Warren. Senator Reed of Rhode Island's recognized.

**JACK REED:** Thank you very much, Mr. Chairman. Thank the panel for being here. Ms. Kilcrease, unlike other financial institutions, private equity funds and hedge funds are exempt from requirements to maintain anti-money laundering programs, verify the identities of the customers, and report suspicious transactions. Are you concerned that this opacity of the private market presents a national security threat?

**EMILY KILCREASE:** Absolutely. And thank you for that question. I think it's been recognized for quite some time including dating back to at least 2015 that there is a potential loophole in our ability to enforce sanctions when it comes to these particular pools of money. And as we're increasingly imposing larger levels of sanctions, including the historically large and unprecedented waves of sanctions that we've imposed against Russia in response to its invasion of Ukraine, those sorts of bad actors, those sanctioned actors, they are going to look for end runs.

They're going to look for legal ways to continue to access their money. So I do think it's critically important that we take a hard look at these sorts of evasion routes and these sorts of loopholes to make sure that when we impose these sorts of sanctions, they're really biting the way we want them to.

**JACK REED:** Well, there's another aspect too, and that is, particularly when it comes to China and Russia, the ability through these private arrangements to

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conduct espionage, to get access to technology or secrets or plans because they are part of the enterprise. Is that a concern of yours also?

**EMILY KILCREASE:** You know, it certainly could be. If they're having access to these sorts of investment funds and the funds are then investing in US critical technology companies, I mean, that's the exact reason why we have CFIUS is to make sure that those sorts of financial transactions cannot be used to access sensitive information that would be contrary to US national security interest.

But what you're raising, of course, is a really critical question around whether we have visibility into these sorts of transactions and the right ability to enforce. And I do think that's an area where we need to continue to have a really strong focus to make sure we're shutting down all those sorts of loopholes.

**JACK REED:** Speaking of CFIUS, Ms. Gorman, when the last reauthorization came about, I included a provision that directed the Committee on Foreign Investment in the United States, CFIUS, to establish a process to assist partners and allies with foreign investment review, basically to collaborate with foreign agencies and look closely at what was going on. And last May, Assistant Secretary Paul Rosen describe how CFIUS is working now with more than 20 other countries to pool their investigations.

Should Congress provide a similar statutory mandate to coordinate export control authorities, resources, and information sharing with partners and allies?

**LINDSAY GORMAN:** Thank you, Senator, for that provision and your leadership on that issue. And it's been inordinately successful. In the European Union, we've gone from 11 nations having inbound investment screening regimes before the provision to now 21 after and more and more nations are working to set up their own investment screening mechanism.

So I think that, yes, that type of provision where Congress provides the authorities, the resources, and the coordination mechanisms and crucially that – those authorities to share some of that sense of information with our close allies and partners would be the next step that's needed in our export control frameworks, because these controls will shoot us – shoot ourselves in the own foot if they are not done multilaterally.

We've heard from US industry that they want multilateral controls and they have the effect of not actually preventing the technologies from getting into the hands of the PRC. So the best thing we can do is fully resourced, create these long standing mechanisms of collaboration. And I think the FIRRMA model is a great one to use.

**JACK REED:** Finally, Ms. Kilcrease, we were all very excited after being shocked by the Russian invasion of Crimea, of not Crimea, about Ukraine, when

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it appeared that our export controls and other sanctions were having a tremendous effect on the Russian economy. But it appears they've been very successful evading those controls and their economy now is not the critical issue.

It's weakened, but it's not the critical issue. What – what more must we do to make sure our sanctions are effective?

**EMILY KILCREASE:** Yeah, it's such an important question. Thank you for that. A lot of it comes down to enforcement. We just need to pour more resources into making sure that the inevitable efforts to get around our sanctions and evade our sanctions that we've got export control officers who are robustly looking out for that.

But also, we need to be putting a lot of diplomatic pressure onto some of these third party countries that are key sources of transshipment. The trade data consistently shows that there's just a massive amount of particularly Western components going through countries like Turkey, like the Stans, through China, and getting into Russia and ultimately ending up on the battlefield.

That's an unacceptable outcome. We really need to be putting pressure diplomatically on these countries to take action in their own jurisdictions to align with the US sanctions approach or ultimately we're going to have to take enforcement actions on many more companies in those countries to really crack down on this sort of evasion.

**JACK REED:** Thank you very much. Thank you, Mr. Chairman.

**SHERROD BROWN:** Thank you, Senator Reed. Senator Van Hollen of Maryland recognized.

**CHRIS VAN HOLLEN:** Thank you, Mr. Chairman. Thank all of you for your testimony. It's an important conversation. And of course, the title of the hearing is The Challenge of Outpacing China in Emergency – Emerging Technologies. And I would say, first and foremost, we've got to invest here at home in making sure that we remain at the cutting edge.

The CHIPS and Science Act was a big part of that. The CHIPS part of that was funded. The science part was authorized and remains unfunded. It seems we've really got to invest in those areas, everything from AI to quantum computing to other – other areas. Second, I do want to mark in terms of protecting US intellectual property.

Ben Sasse, former senator, and I teamed up. We introduced and we passed legislation entitled Protecting American Intellectual Property Act, which does give the executive branch more tools to help companies who are victims of intellectual property theft by China or anybody else. Third, I want to pick up on



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the conversation that we just had with Senator Reed, but also to say I do think the Biden administration has taken the right approach overall.

They recognize that we're not going to decouple from economic engagement with China, but they also recognize that we have to de-risk and we have to make sure that we de-risk critical supply chains, and that we have to work with our partners in preventing very high end technologies that can be used for military purposes from getting to – to China.

And as you know, we've done that in the area of some very sophisticated CHIPS manufacturing equipment with this trilateral agreement we reached with the Netherlands and Japan. We need to – to build on that. As the administration says, small garden, but tall walls. We want to protect sort of our crown jewels and technology.

And we want to – but to have the tall wall. And I want to pick up on the conversation on multilateralism and having the cooperation of – of our friends and allies and other advanced economies in this – in this effort. And especially with respect to where we're going on AI right now, because I believe we need – we need a multilateral approach.

We need an export regime with our allies, similar to the CFIUS process, which has grown and developed. When it comes to AI, Ms. Gorman, as you know, the Europeans have moved forward with some regulations that – do you see that the – the fact that the United States and the European Community are not right now on the same page or the same place as creating openings for China in terms of trying to set standards for AI or to – or to advance their own interests in that area?

**LINDSAY GORMAN:** Thank you for that question. I think yes and no. I've heard conversations from – from folks in the community who are talking about how China is regulating AI better than the US is. I think that's totally wrong. China has staked out a position on AI regulation, but it's in its own national security interests promoting its own core socialist values.

So I think we – we should strive towards transatlantic alignment on AI regulation and I use. I don't think that means we're going to be doing the same thing. I like the innovation forward approach that we've taken so far, making smart investments in responsible AI development use, privacy protecting technologies in AI, and then agreeing on some of the common guardrails and baselines.

For example, using AI for social scoring and mass surveillance, that's a clear no. The US and the EU have both said that. Let's – let's build that into our approaches. I'm also really worried about the threats of AI to our electoral processes when it comes to disinformation and deepfakes. I think there are issues that we can really agree on and put forward multilateral, democracy forward

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regulations on AI without having to be completely in lockstep with the EU.

**CHRIS VAN HOLLEN:** Yeah, no, I'm not suggesting that we should adopt what the EU has done. But I – it is another area where more coordination, it seems to me, could be helpful. In terms of protecting high end CHIPS technology, there's been this new sort of open source risk five technology. I don't know if any of you are available – are following this story closely, but it's an open source and there are increased reporting that are China is actually drawing upon some of this open source technology for their own semiconductor development purposes.

I don't know if any of you can – can comment on that because as we talk about trying to, you know, coordinate among our – our allies and friends, obviously if there's a backdoor through open source, that could create issues. Ms. Gorman.

**LINDSAY GORMAN:** Yeah, I would just say that we have to be smart about which initiatives and which technologies we want to really try to open source. There was a movement in electronic design automation software some years ago to try to create open source repositories for creating these kinds of designs. But when we actually looked at the competitive analysis landscape, it turns out the US has massive advantages and concentration of market share in these EDA software technologies.

So this is why our lack of an analytical capability continues to harm us because we can't assess the effects of should we build out a robust open source ecosystem and something or is it going to sacrifice some of the critical choke points or advantages that we have. And without that capacity, I think we're – we're flying blind in a number of these areas that are central to our future AI competitiveness.

**CHRIS VAN HOLLEN:** I appreciate that. And I see time is out, so I'm going to submit a question to all of you for the record about how we – the best tools for trying to get more multilateral cooperation because of course, the – the – one – one tool we always have is, is secondary sanctions. But that's a very blunt instrument.

So I'm going to pose a question to all of you about how you – how you balance that, when you would use that – that particular tool. Thank you. Thank you.

**SHERROD BROWN:** Thank you, Senator Van Hollen. Senator Smith is recognized from her office.

**TINA SMITH:** Thank you, Chair Brown. Thank you so much to our panelists. And I'm glad to be joining you from my office, if not in person. So Ms. Kilcrease, my question is going to be directed to you this morning. China's military civil fusion strategy I think creates some unique obstacles for how to craft and enforce export controls for these dual use technology because it's difficult to figure out the technologies intended and uses and end users.

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And of course, the rapid pace of innovation and technology only makes this harder. So we need robust controls, export controls that's critical to our national security so that US technologies don't go to unintentionally supporting China's military modernization and intelligence collection efforts. So could you give us your perspective on this?

What challenges does China's military civil fusion strategy pose for our export control? And what more should we be doing to address this challenge?

**EMILY KILCREASE:** Thank you for that question. You know, historically, our export controls try to make distinctions between technology exports that would be for civilian purposes and those that would be used for military purposes. I think we are increasingly realizing that you can't make those sorts of clear distinctions and you can't enforce those distinctions when it comes to the Chinese economy based on the structure of their economy and their clearly stated military civil fusion policies.

And so what you've seen in recent years, most notably in the October 7th export controls in 2022 released by the Biden administration was a response to that where, instead of trying to make these sorts of distinctions, we instead drew a line in the sand and we said technology that exceeds these technical thresholds is a de facto national security risk if it goes to China, regardless of whether the stated intent is for military purposes or for – for civilian purposes, because we just can't tell the difference anymore.

And I think that is generally the direction of travel that we need to consider when it comes to technology exports to China. We should not rely on an ability to have full visibility into and be able to enforce in that very difficult context within the China market. I think that certainly applies for the export control conversation.

It certainly applies when we're talking about the investment security tools as well. We just have to be very clear eyed that we're going to have to take these country wide approaches to imposing controls on these technologies that have such clear relevance for our national security interests.

**TINA SMITH:** And do you think that that step is sufficient or is that more – what – what – what more should we be looking at?

**EMILY KILCREASE:** I think it's a good start, but that country wide approach really – it's limited right now to the controls that we implemented with respect to CHIPS, AI, and supercomputing. There's a lot more that we can do. There's many more sectors where we should be looking at whether the control lists are fully adopting that sort of country wide approach in some of the sectors that China itself has identified as a priority for them to develop and dominate in the global marketplace moving forward.

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So we really need to invest and have a keen focus on that continual process of updating the control list, particularly in emerging technology areas, to make sure that they are not stuck in the Cold War era, but are really keeping pace today. And then, consistent with the themes we've we've all been talking about, do we have the analytic capability to understand as we roll out these new and innovative sorts of controls?

Are they working? Are they slowing Chinese indigenous capabilities in the way that we want them to?

**TINA SMITH:** And thank you for that. And following up on that, and also I think a bit on what Senator Van Hollen was asking about, in addition to sort of taking this approach with – with our export controls, what more should we be doing to encourage our allies around the world to sort of operate in the same way? I mean if we, for example, bar a US firm from exporting technology to China, but they can – you know, they can get the same thing from somebody else, we haven't accomplished that much.

**EMILY KILCREASE:** Exactly. It absolutely needs to be a multilateral approach and there's a lot more the US could be doing. We currently coordinate controls with key partners under the multilateral export control regime process. But there are some serious questions about whether that's sufficient or fit for purpose. We need to be thinking about how to enhance strategic alignment with our allies, who we don't always agree with on how to address the China threat.

So that's priority number one. Are – have we convinced them and have we provided the analytic and intelligence arguments to our allies to convince them that they also need to be taking this sort of country wide broad approach to controls. And then from there, we need to be going to our partners and allies on a regular basis with a focus on the key producer nations in these key technology areas and saying this is what the US thinks we ought to control.

Will you come with us? Ultimately, I think ideally, what we would like to see is a new export control regime that really allows for a focus on strategic trade controls and the strategic competition with China. There's a lot of skepticism in our key partner countries right now on that idea. So we also need to be thinking about interim steps that we can take to strengthen alignment.

But ultimately, that goal should be a new formalized regime process that really allows us to do this in lockstep with partners and allies on a regular basis.

**TINA SMITH:** That's great. OK, thank you so much. Mr. Chair.

**SHERROD BROWN:** Thank you, Senator Smith. Senator Warnock of Georgia's recognized.

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**RAPHAEL WARNOCK:** Thank you so much, Chair Brown, for this important hearing on our national security and outpacing China. Last year, the Congress passed the CHIPS and Science Act. It's a piece of legislation I was glad to support and champion. It spurs research in several critical technologies, including quantum computing, AI, cyber infrastructure, and more in our effort to make sure that we remain competitive with China and in fact have the competitive edge.

Georgia, I'm very proud to say, has been leading the country in our efforts to stay globally competitive using research and development funding from the CHIPS and Science Act to pursue cutting edge research in health care, agriculture, cyber security, and beyond. Chips are in everything. And for the fiscal year 2024, in spite of our passing this legislation in which the CHIPS and Science Act authorizes over \$26 billion in domestic research investments, and one could make an argument that we should have done more, in fact, the draft appropriations bills only include about three quarters of that amount.

So there's a disconnect between the seriousness of this issue, the importance of us passing that legislation, and where we are right now in terms of appropriations. Ms. Gorman, as China continues to significantly expand its investments in research and development, do you agree that supporting domestic research is a matter of national security?

**LINDSAY GORMAN:** I do, 100 percent. And I think it's one of the top priorities that we – we should have. The CHIPS and Science Act, which was a historic bipartisan win, reversed decades of underfunding in our research and development enterprises that have put the United States atop the world, a Global leader in many of these exact areas you're talking about, AI, quantum information.

We can't risk having those advantages fall by the wayside, especially when the PRC is moving ahead and trying to become the global leader and outrun us. These investments are critical and it shouldn't just be a one time deal. We've – we've called for a process whereby every year, every two years, maybe every four years we reevaluate what are the key technology areas we need to win in the competition and are we resourced for it and how do we leverage the whole of the American population, all regions through innovation, hubs and tech hubs towards those goals?

This is, I think, almost no – no higher priority.

**RAPHAEL WARNOCK:** Well, I agree. And the tech hubs is an important provision in that legislation that I've certainly supported. But we – we hear this argument or this differentiation between defense and non-defense in terms of appropriations. And if I'm hearing you correctly, you would – you would agree that investments in agencies like the National Science Foundation and the Department of Energy are critical to our national security and that the

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distinction is worse than an academic distinction.

It's terribly unhelpful.

**LINDSAY GORMAN:** Completely. They're – they're critical to our future competitiveness, which is at the heart of the strategic competition, which is a national security competition with the PRC. We can no longer think only in terms of hard power, especially when the PRC is playing on so many other playing fields. They are weaponizing their economy to coerce businesses to – to give them technology.

They are coercing individuals to silence them on critical issues that the PRC doesn't want to hear about. This is a full society competition and so limiting ourselves only to this traditional notion of military hard power misses a huge swath of the competition space.

**RAPHAEL WARNOCK:** Sure. They – they don't respect these silos, these – in terms of appropriations. Now, in addition to this, it seems to me that we also need researchers and students from all across the country to bring these scientific innovations to life. We need all of our brainpower, and that's why I authored a provision in CHIPS and Science to increase research capacity at HBCUs, historically black colleges and universities, and also minority serving institutions.

Supporting these institutions is not simply about equity and diversity. It, too, I would argue, is about national security. If we're going to effectively compete with China, we must find and nurture the finest minds in our country. And as a proud HBCU graduate, I – I think I know where you can find some of those incredible young people and talent.

Ms. Gorman, what else can Congress do to ensure we're identifying and supporting talent, whether that talent comes from Georgia Tech, Savannah State, or Spelman College?

**LINDSAY GORMAN:** I completely agree. We need – this – this is a tough competition. We need the best and the brightest from everywhere across the country. I think what we – Congress can do going forward is replicate some of the initiatives that were in the CHIPS and Science Act for other critical technology areas. Creating these types of innovation hubs, creating a focus on HBCUs. I saw the Air Force has also partnered with HBCUs in technology development and achievement.

Initiatives like that across these other emerging technology areas, not just the CHIPS manufacturing which is incredibly important, bio-manufacturing, quantum information, agriculture, clean energy – energy technologies. There's so much more we can do and all our communities are affected and so we need all of our minds working on the problem.

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**RAPHAEL WARNOCK:** Thank you so much. We certainly need to strengthen the pipeline, tap into all of the brainpower that we have, and I appreciate your perspective.

**SHERROD BROWN:** Thank you, Senator Warnock. Senator Fetterman from Pennsylvania is recognized.

**JOHN FETTERMAN:** Pardon me, sir. Yes, thank you, Senator. Thank you, Mr. Chairman. Hi, thank you. It's great to always talk about the experts. And my first question is to anyone on the panel. You know, everyone recognizes the danger of IP theft and China has a well known history of stealing our intellectual property. Do we agree?

Almost the, you know, the one copy kind of county. We need to block China from stealing or using our IP to develop and weaponized artificial intelligence. Can anyone on the panel describe the gaps that allow China to steal IP and how can we cover those gaps?

**JAMIL JAFFER:** Sure. Senator Fetterman, a couple of thoughts. One, you know the Chinese have engaged in a decades long effort to steal electoral property out of American computer systems and the like. Billions of – millions of dollars a year, billions of dollars in total. General Alexander, the former Director of NSA, called the greatest transfer of wealth in human history.

So we've got to push back, we've got to deter both at a government level and an industry level. Today, private industry is not capable of defending itself. It simply doesn't have the capacity or knowledge and know how the government has. So we've got to partner tightly between industry and government. And then second, we've got to really incentivize our – our cybersecurity defenders and our companies to really protect their own intellectual property.

They have every incentive today. We can – we can put more money and more effort into that by giving them tax incentives to the like to – to better defend their systems.

**JOHN FETTERMAN:** Anyone else on the –

**LINDSAY GORMAN:** Yeah, I mean, I would just add to that that the problem also exists in terms of forced technology transfers. The allure of the Chinese market remains a compelling factor for companies who want to do business and sell their products in China. Oftentimes, it means they are forced to partner with Chinese firms that have an explicit goal of buying them out of the market, taking their technology and eventually replacing them.

I think the short term capitalism that drives our system is a strategic vulnerability here. We are not necessarily looking to our long term competitiveness when

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we're so focused on quarterly earnings and quarterly turnovers.

**JOHN FETTERMAN:** Well, I mean, well – well this is a hearing. You know, really the title is National Security and Our Challenges and Emerging Technology. Would you agree with that, that AI would be the single largest – the biggest one – threat or no or what do you think, anyone?

**EMILY KILCREASE:** You know, I think we need to have a holistic approach when we're thinking about the technology competition with China, simply because they are as well, right? They're trying to prioritize investments and – and leadership and domination in a range of sectors. AI of course is a really important one. I'm just as worried, candidly, about growing market share of China in legacy chip production.

That raises a whole host of additional national security risks that we haven't even scratched the surface on in terms of appropriate policy responses. So I do think we risk if we overly focus in one area, we're going to have a blind spot in other areas. So it needs to be biotech, AI, quantum, CHIPS, a whole host of other technologies where China is really making those investments.

And we need to as well.

**JOHN FETTERMAN:** I like that. Any others? I really like this – where this is going. Any other?

**LINDSAY GORMAN:** Yeah, I would add, it's not only the AI threats that we're, I think, that are in the popular zeitgeist of these kind of doomer scenarios and those AI risks. But I would like to see us focus more on how is China applying AI to all these sectors that they've said that they want to lead in. Those are where we're going to see, I think, the biggest applications of artificial intelligence and the biggest industry and societal advancements.

And China is very, very good at taking a technology developed elsewhere and commercializing and applying it extremely well. And I worry that, even though the US has an edge on these frontier models, large language models, once they hit the Chinese market that they may be able to apply them better than we can.

So that's what I would be – one of the things on AI that I'm quite worried about.

**JAMIL JAFFER:** I also worry, Senator Fetterman, that we not overregulate the space, right? If we want to maintain the innovation here in the United States, we want to ensure that we continue to lead on frontier models, putting limitations on how those can be utilized and how they might be employed are going to be problematic for further investment and further development of those models.

So the right way to approach that, I think, is to encourage and advocate within



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our industry to ensure that there's trust, safety, and security baked into our models, that we're auditing them, that we're thinking about how they're being utilized, that we're deploying them and testing them before we put them out in the world.

At the same time, artificially limiting them by – by, you know, measuring how many, how many, how many, how much computing power they use or – or how many – how many elements they process, I think, could be a mistake and allow China to get the edge. We don't want to allow that to happen. We want to make sure that investment and that capability stays here in the United States.

And then, we all seem to be cognizant of how much data China is acquiring and how to use that data to empower their ability to repress their own people and to act against the United States. So when we look at capabilities like TikTok, people say why worry about cat videos? Exactly. It's not just cat videos.

It's data about average Americans. The idea that TikTok buys ads at DCA and is convincing Americans and American legislators through those ads is outrageous. The Metropolitan Washington Airport Authority ought to be embarrassed that there's – that they're having ads at Union Station and at DCA for TikTok, a Chinese government influenced media influence operation.

**JOHN FETTERMAN:** Yeah, I – I wish I had an hour because I – you guys all touched on really critical kinds of issues and where this can go or what's possible. But I know we've – unfortunately we've lost our time, but – but back to you, Mr. Chairman.

**SHERROD BROWN:** Thank you.

**JOHN FETTERMAN:** Thank you for the experts.

**SHERROD BROWN:** Senator Fetterman, thank you. I know you almost always go last, but thank you for always your thoughtful questions and response some. Thank you to the three witnesses, a really, really good hearing and thank you so much for that. For senators who wish to submit questions for the record, those questions are due one week from today, January 25th, please.

To the witnesses, you have 45 days, if you would, to respond to those questions. Thank you again. With that, the hearing is adjourned.