

Peterson Institute for International Economics

The realities of economic security

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[00:05:19.19] - Anjali V. Bhatt

Good afternoon, good evening, good morning, wherever you are in the world, and welcome back to the Peterson Institute for International Economics Spring Meetings programs. I'm Anjali Bhatt, Communications Manager and Research Fellow here at PIIE. I'm delighted to moderate this important and incredibly timely panel on the realities of economic security. Security, even economic security, might seem a little different from our typical, typical fare here at PIE, but as we've increasingly seen over the last few years, highlighted in 2022 by Russia's invasion of Ukraine and thrown further into the spotlight over the last 6 weeks, the worlds of economics and national security are getting closer and closer together. Crafting policies that are economically sound while also maintaining national security is a puzzle that every country in the world is grappling with right now, and existing global economic integration makes that puzzle more complicated. Trade-offs between efficiency, capacity, resiliency, security, and autonomy are real, and what may have been an acceptable level of risk in the past, in the past, is no longer so. As we are all well aware, the world is in a period of change. Geopolitics are changing, alliances are shifting, and countries and companies are being forced to rethink supply chains as they're being disrupted, whether that is from military action or trade policy choices.

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To try to put a little bit of this economic security puzzle together, we've got some great presentations here for you today. We're going to start with Warwick McKibbin, who will give an overview of the meaning of economic security, what it depends on, and what threatens economic security, particularly in the US. Warwick is a distinguished professor of economics and public policy and director of the Center for Applied Macroeconomic Analysis in the Crawford School of Public Policy at the Australian National University. That's a mouthful. He joined PIIE as a non-resident senior fellow in September 2023. Warwick will be followed by Collin Hendricks, who will discuss vulnerabilities and cascading risks the Iran war poses to commodities. Collin is a senior fellow here at PIIE, a non-resident senior research fellow at the Center for Climate and Security, and fellow at the Payne Institute at the Colorado School of

Mines. He's been affiliated with PIIE since 2010. And after Collin will be Jacob Funk Kierkegaard, who will be presenting on Europe's strategic economic policy choices between resilience and autonomy. Jacob has been a non-resident senior fellow at PIIE since September 2020 and resident senior fellow with Bruegel since September 2024.

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He's been affiliated with PIIE since 2002. After the presentations by this excellent Peterson panel, we'll have a conversation to try and tie everything together, and then we'll open the floor to audience questions. So with that, Warwick.

[00:07:57.28] - Warwick J. McKibbin

Thank you very much, Anjali, and thank you all for coming, and thank you for the Peterson Institute for inviting me to present some of this work today. When Anjali invited me onto the panel, my initial reaction was to present the work I'm doing with Marcus Noland and Jeffrey Shoutram on the impact of the Iran War on the global economy, which we are continuing to do and which will be out in a week or so. But the first slide I put together was this question of what is economic security, and slide 1 became slide 2, 3, 4, 5, because it turns out when you think about it, the war in Iran is not really the biggest problem we face in terms of economic security in the global economy or in the US. So I, I asked the question, what is economic security? Well, from a macro point of view, it's having an economy which has strong growth which has low stable inflation, which— where the drivers of economic growth, productive capacity expansion, capital accumulation, technological progress, and human capital development is encouraged and reinforced. And also, it's an economy that needs long-run fiscal sustainability. If you don't have fiscal sustainability, it leaves your economy at enormous risk.

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That's the level effect. There's also the question of volatility. A, uh, economic security is about minimizing the sort of disruptions that come along from unanticipated shocks. To do that, you need fiscal space. You need the capacity to have counter-cyclical policy without triggering a debt crisis. You need monetary space. You need an independent central bank, independent of political interference, with a credible inflation targeting framework. It needs to be able to respond when there's an economic downturn. And you need a resilient financial system. You need well-capitalised banks. You need robust regulation. You need to allow automatic stabilizers to respond. And these automatic stabilizers, an important component is access to international trade and capital markets. And so that's a key driver of resilience. What does national economic security depend on? Well, there's both domestic foundations and international foundations. The

domestic foundations are the endowments. Obviously, if you're endowed with a lot of energy, then you're less vulnerable to shocks to the energy system. But it also depends on human capital, depends on access to technology, and it depends on access to global markets and through market mechanisms and alliances. You need strong domestic institutions, the rule of law, the independence of the central bank, You need a form of political consensus on what are the foundations of economic policy, because without political consensus, the uncertainty you generate within the domestic economy will, will harm economic security.

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You need property rights, you need fiscal rules, and you need monetary frameworks. And you need a financial system that allocates credit to the high-return investments, not towards political constituencies, and through regulation and tax policy. They're the domestic foundations. The international foundations are: you need a peaceful, rule-based international order, you need functioning multilateral institutions, enforceable contracts, dispute resolution mechanisms that underpin cross-border trade in goods and financial assets. You need strong alliances, trusted partners which provide mutual insurance against shocks and allows you to, to de-amplify economic shocks through automatic stabilizers. The openness of the economy is a very important part of the capacity for a country to stabilize in the face of either domestic or foreign shocks. And you need access to goods and services through trade. If you don't have them domestically, you need access to them from the global economy based on the rule of comparative advantage. Autarky is not security. And that seems to be one of the debates that needs to be had in this country. What are the threats to international security? Well, there are several. Geopolitical fragmentation, trade wars and tariffs. Marcus Nolan and myself and Geoff Shuterham have published a number of papers on the economic costs of Trump's tariffs, both the ones that have been announced and the ones that probably will be announced.

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And all of these shocks reduce economic growth, and they increase inflation, and retaliation by other countries accentuates this loss of economic security. The breakdown of the rules-based orders can lead to an increase in country risk premia, and again, Marcus and I have analyzed that in recent Peterson Institute papers. And the erosion of alliances— you need strong alliances, a peaceful international order as a foundation of, uh, for economic security. If you don't have these alliances when you have the need for cooperation in response to a shock, whether it's a war in the Middle East or a global financial crisis, then you undermine the capacity of your country and the global community to respond. Another aspect is the debt overhang and fiscal stress. At the moment, countries have very, very high debt-to-GDP ratios, both historically and in terms of sustainability. The higher the debt-to-GDP ratio, the less the capacity to respond

to various shocks. And we know from the global financial crisis and from economic theory that coordinated fiscal policy is more effective in the business cycle response than, than asymmetric fiscal policy. And finally, we need monetary and financial stability, and we need cooperation between central banks when shocks occur.

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The other aspect which I think is important is the other threat is climate and energy transitional issues. We need to coordinate over the reduction in greenhouse gas emissions. We want to do it at the lowest cost, and the lowest cost requires cooperation at the global level. My own work on this through the Climate Asset Liability Mechanism, which is discussed further in, in Markus's new edited volume that came out this week, talks about how you want it, how you can actually devise an institutional arrangement independently in each country, but coordinated across countries. You need that cooperation to get the gains from minimizing the costs. Uncoordinated transmission increases costs, and then we have issues of critical manual dependencies, which Cullen will be talking about probably in the next presentation. And on top of this, we have a lot of demographic problems facing the global economy. What's interesting about the demographic pressures is they're very asymmetric. So we have China aging rapidly. We have the US aging less rapidly, but losing potential immigration and population growth through, uh, through deportation and other immigration policies. But we have enormous opportunities in Africa where the demographics are positive and there's a way in which we can actually offset the negatives and the problems facing the US and China with dealing with institutional development and building economic growth capacity in Africa.

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So, what's the final— what's the balance we face here between dealing with these national economic security issues? It's a balance between security and efficiency. Security versus openness. We know that tariffs are causing enormous damage and will continue to cause enormous damage. We need to trade off the green transition with the issue of energy security, and that's a challenge which, uh, which is important and which people are obviously aware of in today's, um, world. Um, the issue of fiscal sustainability and stimulus— while it's convenient for governments to want to expand fiscally wherever possible, you need the capacity to do stimulus measures when the shocks occur. And one of the problems we face now is we're moving the global economy into a position where the capacity to respond has been diminished. And again, we have this issue of demographics which will be needed to be addressed at the global level and through cooperation across asymmetric demographic adjustment in different countries. And I'll stop there. Thank you.

[00:16:18.16] - Cullen S. Hendrix

I was concerned that Jacob was going to usurp, um, and then I would be locked in mortal combat. I don't like my odds. Good afternoon, everyone. I'm Cullen Hendricks. I'm here with the Institute. I want to use my time today to argue that the disruptions that we're seeing coming out of the Persian Gulf conflict, particularly in the commodity space, are not really best understood as parallel shocks that are happening simultaneously. They're actually connected shocks, and they're cascading through the global economy via specific physical mechanisms that link markets. And I think that markets are significantly underpricing some of the risk that's emanating from these kind of physical relationships between different commodities. I'm going to talk a little bit about what those mechanisms are, a little on what the forward curves are telling us, or my interpretation of what they're telling us. You're probably more sophisticated consumers of that than I am.

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I'll—

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a little on what, building out into something like a scientifically informed wild fill-in-the-blank guess about when these commodity disruptions are likely to resolve once the shooting stops. And I do not have a firm take on when that is going to occur. So I won't hazard a guess. Let's start by talking about Hormuz and why this is such a difficult circle to square. You're all probably familiar with the fact now that the navigable corridor in the Strait of Hormuz is 4 miles wide, right? Was that, had that become common knowledge? It's an important number to keep in mind, but I actually think that the much more important number for understanding the strategic dynamics in the Strait is 60 to 90 seconds. And that's about the time it takes for Iranian anti-ship missiles to arrive in the kill zone. In the middle of that navigable corridor. Now, that's roughly equal to the time that US anti-missile and drone defense systems, the Aegis systems that accompany US carrier groups, that's roughly equal to their response time under ideal conditions with a high angle launch trajectory in open water. The Hormuz is not open water, and the launch angles of these anti-ship missiles are not high.

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It's not ideal. Under these circumstances, the last resort is the Phalanx autocannon, but firing depleted uranium penetrators around tankers that are outgassing flammable vapors in the confined space is a genuinely dangerous kind of strategy to employ in terms of trying to escort ships through the Strait. Iran's doctrine is specifically designed for this environment. They knew

that all of their major naval assets were going to get hit. Their endgame for the Strait was never predicated on having access to their frigates and destroyers. It was having access to mosquito boats, anti-ship missiles, and drones. The US counterblockade strategy may work over time. It's essentially at this point a test of resolve. But in order for its counterblockade to operate, it's going to limit the ability of those same naval assets and the air assets associated with them to impose further costs on the regime. So we seem to have arrived at an interesting and indefinite hurting stalemate for the moment. But the real challenge here isn't the hard security story. It's commercial. And that's that tankers don't answer to admirals. They answer to insurers. And so even a proof of concept kind of naval success by the US military in running the blockade is not going to necessarily move insurance prices.

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In fact, it might send them higher. So the endgame here is going to be, I think, negotiated, not a sustained or even decisive blockade run. Now, the oil price shock that we're all watching is partly a physical shortage and partly an uncertainty premium. I'm not going to belabor that because I think that's actually been the part of this story that's been the best covered in the media. I would like to talk a little bit about LNG, and then I'll talk about some downstream challenges. LNG is really the bigger cause for concern here. Europe and East Asia spent the post-Ukraine years kind of playing their diversification cards, locking up alternative supplies, building regasification capacity, et cetera. They don't have that many moves left. They already played their best cards. And Qatar, which is effectively kind of the global backup plan for LNG supply, has declared force majeure on about 17%— excuse me, I need to get that right— 17% of their capacity with a timeline of potentially 3 to 5 years to come back online. Italy, Belgium, South Korea, and China are the most directly exposed through that channel. Now, the greatest kind of near-term risks, I think, in terms of additional geopolitical risk stemming from the LNG crisis are going to fall on these kind of food and fuel import-dependent economies in the developing world.

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Many of them have either limited or zero capacity to hold strategic reserves. They do not have the fiscal space to absorb the challenges the way that advanced economies can. And these spikes themselves are very destabilizing to developing economies. That is, when these prices rise, political instability is likely to follow. Now, energy is, I think, of course, the above-the-fold part of this story here. But it's— energy is not just a cost input. It's the master price that moves other markets through costs and, frankly, through chemistry. What I mean by that is that there are kind of two specific physical transmission belts that are connecting this energy shock to food prices and then also to industrial inputs. The first runs through petrochemicals, specifically the

natural gas feedstock required for ammonia synthesis, which is the foundation of nitrogen fertilizer production and phosphate fertilizer production. I found out from our board member, Mustafa Tarab, the other day. Um, of course, petrochemicals also underpin all plastics, which is pretty important. The second is going to run through sulfur and sulfuric acid, which is a critical industrial input that is produced as a byproduct of petroleum refining and smelting. And it's essential to phosphate fertilizer processing and to copper and nickel refining.

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So it's not just hitting the fertilizer base, it's also going to have downstream impacts for critical minerals as well. Now, this supply chain is under significant stress due to the Hormuz closure, and it's going to be exacerbated by China's announced intention to ban sulfuric acid exports beginning in May. And they had already instituted quotas, actually, for those exports earlier in the year. China was the world's leading exporter in 2024. So this is very meaningful. Now, these are not kind of abstract financial market-based correlations between different asset classes, right? Literally, one of them is necessary as a feed-in to produce the other. When the Gulf's energy supply is disrupted, both of these transmission belts get activated simultaneously, hitting food and industrial supply chains through the same underlying shock. All right, so what are the futures markets telling us? Um, this chart shows forward curves for oil, urea, and copper, all indexed to 100 as of about a week ago, um, with April 2025, so a year ago essentially, price levels shown as your horizontal reference lines. A few things are very clear. Oil is in steep backwardation. The market is pricing conflict resolution, or at least significant conflict attenuation, by Q4 of this year, which aligns conveniently with the US midterm elections.

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Make of that what you will. By the end of the year, prices are somewhat attenuated, but they're still significantly higher than they would— than they were in 2025. Urea, which is critical for fertilizer supply chains, tells a different story. This forward curve is shallower and it's shorter. Urea is a much less financialized market, so price discovery beyond a few months out is much more limited. The urea curve kind of shows what we would expect, which is a typical Northern Hemisphere planting season pattern, softening midsummer post-planting and then recovering in the fall. But if you notice, it stays well above the April 2025 baseline throughout. The conflict shock here in essence has raised the floor without eliminating the seasonal signal. And then we can talk about copper, right? This is a critical mineral that is key not just for the military industrial base, but is also the backbone of the AI and data center revolutions. Copper has barely moved off of its baseline, and its April 2025 reference line was— is kind of significantly below current prices. And that's because copper was already in this kind of a structurally bull market to begin with. The energy shock is kind of compounding an already tight market.

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It's not actually creating a new disruption in this market. From scratch. So I think that the gap between how markets are pricing the oil resolution and how slowly the downstream cascade actually unwinds, I think that that's fundamentally the risk that we're misunderstanding at this point, particularly in fertilizer markets, where the futures curves kind of look like business as usual, albeit at a higher price base. Now, natural gas is not just fuel for fertilizer plants. It's also literally the feedstock for the Haber-Bosch process that synthesizes ammonia. So if you shut down the gas supply, you also are shutting down natural nitrogen fertilizer production, not gradually, but actually immediately. This is a sort of a replay of some dynamic that we saw in 2022. Sulfuric acid is also— I mentioned that earlier— is essential to phosphate fertilizer processing, which is the same supply chain stress I described for mineral processing that's now hitting the food supply chain through kind of a different intermediary product. Now, the transmission of this kind of price shock to food prices is lagged, but it's highly reliable because it runs through planting decisions. Farmers make input purchase decisions months before harvest. And if they're facing elevated or unavailable fertilizer at planting time, which is essentially now for the Northern Hemisphere, the yield impact is already baked in.

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If it's not applied now, we can't make it up later. You never have a second bite at the apple, so to speak. And the timing really in some senses could not be worse. This chart that you see here shows the trend in global acute hunger that existed before the conflict started. Nearly 320 million people facing acute hunger in 2025. A commodity shock of this magnitude hitting this population in this supply environment is not just an economic risk, and it's not just a humanitarian risk either. It's a political stability risk for emerging markets and frontier markets. In addition to a brewing humanitarian catastrophe. Now I'd like to touch on critical minerals, as Warwick kind of teed me up for here, which is certainly a hot-button issue. I think there are kind of two basic stories here related to the war in the Persian Gulf. The first is kind of energy intensity. Smelting and refining metals often dwarfs the energy intensity of mining itself, often by several orders of magnitude. So an energy price spike is going to hit the processing economics effectively immediately and severely, even if, you know, mining activities are not really affected themselves.

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And then the second is going to be an issue related to geographic concentration. The Gulf Cooperation Council countries account for about a quarter of all aluminum smelting capacity

that exists outside of China. And that's— they're there because that's where the cheap energy is, or at least historically where the cheap energy was. Now, this is not an abstraction I'm talking about here. Iranian strikes have already hit the EGA facility in Abu Dhabi and the Alba complex in Bahrain. They're two of the world's largest single-site smelters of aluminum. And the aluminum spot price that you see here shows exactly what happens when that news hits markets. We're up about 12%. From the start of the conflict. OK. Now, assuming you haven't reached for your kind of hemlock yet, I'd like to close with kind of this scientifically informed wild guess I mentioned at the outset, which is kind of looking forward, a guess as to how long it's going to take these supply chain disruptions that I've been referring to to work their way through the economy once the shooting stops. So think of it as a— Please don't take this as a hyper-precise estimate. Hopefully this is directionally accurate and of a consistent with the proper order of magnitude.

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I'll say that. Oil might normalize in 1 to 2 months. Shipping insurance is going to take a little bit longer. LNG facilities in region, if they're undamaged, might take 3 to 6 months to return to pre-antebellum kind of production levels. But if Ras Laffan or comparable facilities have actually sustained serious damage, as they did in Qatar, that time frame could take anywhere from 3 to 5 years. The cascade commodities, so these are fertilizers, copper, food prices, those tails run 6 to 18 months even under optimistic assumptions. Food prices that might emanate from a shock driven by planting decisions now won't really fully normalize well into 2027. And the food price shock, if we think that there's one downstream of this, is likely to materialize late in 2026, early in 2027. The basic structural point I'm trying to make is that the obvious shock will cascade through many commodities. The cascade is occurring rapidly and in real time, and the vulnerabilities are structural. They will not resolve as cleanly or quickly as oil markets will when the navigation, when navigability returns to the Strait of Hormuz. And while I've been focusing, I think, on kind of relative prices and supply chain risk, I want to say at the end of the day that all of these market costs are going to translate into a world that is less well-fed, more dependent on volatile fossil markets for longer, and ripe for knock-on political instability in cash-strapped developing and middle-income countries.

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Thank you.

[00:30:37.47] - Jacob Funk Kirkegaard

Well, thank you very much.

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And so I want to talk a little bit about Europe and these questions about economic security and the trade-offs embedded with it. And I guess the first thing to ask is, why is it, I think, particularly relevant to talk about Europe? For these issues at this moment. And there I think probably the main reason is that Europe is the country in which these trade-offs have become most acute. Because Europe not only in the last number of years have had the unfortunate circumstances of being directly physically attacked by its main energy supplier Russia, Europe is also the region of the world that historically benefited from— it's not the only one, but it certainly historically benefited from a very direct American security guarantee in the form of NATO. And therefore, and I say this not only because I'm Danish, Europe has particularly been vulnerable to the United States, depending on how you look at it, going rogue, on security guarantees, or at least rethinking its role as the provider of security guarantees with the Trump administration. And then finally, Europe, as one of the largest manufacturing exporters in the world, some member states more than others, is particularly vulnerable to the challenges posed by China's recent economic policies, both in the form of critical minerals but also a more broad-based export dependency and the general improvement of Chinese manufacturing competitiveness.

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So, that's why these issues, as I said, have been particularly on the forefront of European policymakers over the last 4 to 5 years. And I'm actually going to, I think, draw a fairly optimistic conclusion. Which is that so far, at least, I would say that the European leaders have at least avoided doing stupid things. They have avoided learning the worst lessons from other large economies and have actually, I think, put Europe on a lot of these issues on a, at least potentially, I would say, constructive route. Where you actually manage to, if not solve, then at least have a fairly rational and constructive balancing of these inherent trade-offs. And if you think about, for instance, there clearly is a very— or is there a trade-off between economic security and resilience, for instance? And there, I think you would have to say that that's not necessarily the case. And if you, in fact, you know, resilience as it has been articulated by the European policy process, which is basically a call for increased diversification, most presently in European legislation on critical minerals, where there now is a policy target showing that or having an intention to ensure that no single supplier of a long list of critical minerals can, can apply or can, can be for more than two-thirds of European total supply.

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Now that supplier is obviously China. So basically you have come up with an attempt to increase resiliency that basically necessitates the negotiation of more free trade agreements. Rather than fewer. And if you look at the trade agreements that the EU, but also the UK, have negotiated in the last couple of years, there is inherent in all of them typically a critical minerals chapter. So it's actually, I would say, a very rational way to promote this policy goal. The next question is, is there an inherent trade-off between autonomy and economic security? Well, as Warwick said, that's very much the case. There is very clearly the risk that a desire for economic security leads to what I would call an excessive desire for autonomy and indeed autarky, as I think Warwick said. But also there, I would say that— actually the European Union have ended up in a place that is not terrible, if I may put it that way. Europe in recent years went through, or recent months, went through the debate about the proposal of Made in Europe, which was potentially at least a proposal that could have led the EU to adopt many of the directly explicitly, if you like, protectionist measures that would have subsidized the production, the location of production in a very long list, potentially very long list of quote-unquote strategic industries inside the European Union.

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This would have potentially been highly discriminatory and of course fiscally potentially very expensive. The good news is that I would say that the EU avoided that bullet as well. Because the actually proposed and likely ultimately implemented version of Made in Europe is actually not made in Europe, but more better translated by made in Europe and potentially FTA and other partners, which actually means that the trade-off, you know, between autonomy and economic security in the European Union is also has been solved in a way that actually at least is not incompatible or in conflict with existing and future free trade agreements, but actually the opposite. Again, I would say, generally speaking, quite constructive way of solving this trade-off. And then I want to also talk a little bit about this particular trade-off that the United States faces vis-à-vis its historical security provider, which is of course the United States. Because there you have this, and we have seen that over the last number of years, you have a very direct link between the trade relationship, the transatlantic trade relationship, and the transatlantic national security relationship. But there I would argue that the, if you like, Turnberry moment that Europe went through last year which was basically a particular point in time where EU policy was shaped by the clear overarching policy consideration that national security considerations with the United States, aka directly related to Ukraine, was basically more important than trade relations.

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That is what led to the Turnberry Agreement last summer, which obviously from a trade point of view was very unbalanced, that basically allowed the Trump administration to impose, broadly speaking, 15% tariffs on EU exports and no European tariffs on— or no corresponding EU tariffs. Well, that moment, in my opinion, is basically over. I think it's very instructive to pick up on a little bit of what Colin said about the Strait of Hormuz or the Iran crisis, because if you compare the European policy response last year to the European policy response to similarly impassioned, I would say, calls for support by the Trump administration to the solving of the Strait of Hormuz crisis, the European policy response is very, very different. Now, there are two reasons for that. One, of course, is that the Supreme Court has prevented President Trump from linking AIPA tariffs with whatever foreign policy concern he might have had at any moment of time. But I think the other issue is that the situation in Ukraine means that ongoing support from the Trump administration in that war effort is a lot less important today than it was just a year ago. And what that means is that basically the European response to US or the Trump administration's call for support in the Strait of Hormuz, for lack of a better word, has been a middle finger.

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Basically, it's like, we will come back to you when you have solved, when you have reached a ceasefire or a peace agreement. So what that means is that you have ended up with, I think, a basic delinking of these types of hard national security considerations from other trade and economic considerations in the transatlantic relationship. And I think that's a very constructive way. Now, it has happened in a way, coming back to what Warwick said, that there is a fiscal space component in this because it's not only about, the military situation in Ukraine being more stable in many ways. It also has to do with that Europe has undertaken, historically speaking, a very— and nearly, nearly unprecedented rearmament process. But it's also very clear, I think, to recognize that this rearmament process is very, very heavily predicated on available fiscal space. You can basically, if you estimate the increase in European rearmament, explain it largely by two things: the physical distance to Russia and the debt levels in 2021. And what that also means is that rearmament naturally from that is largely a Northern and Eastern European affair. In the long run, that will create some potentially challenging situations inside the EU.

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But again, it's just, I think, important to recognize that the overall direction here is one in which the traditional composition of the transatlantic security relationship, namely NATO's Article 5, is a lot less important today. Than it historically have been. What that means is that you're basically left with two remaining major dependencies in the transatlantic relationship once you get out of the fundamental national security and military one. That is on technology and

increasingly also on energy. But I would say there are those in Europe who will argue that, well, we're just replacing one set of independent dependencies, especially in energy, on Russia with a dependency on US LNG imports. Now, I would argue that that is a false equivalent. It is also sometimes argued that the same kind of shift from a Russian gas dependency to a dependency on Chinese imported solar panels and batteries, et cetera, is somehow compatible. I don't think that's the case. Because I would argue that once the hard security NATO Article 5 dependency that Europe clearly historically have had on the United States is behind us, which I would argue we are well on the way to, then the possibility to weaponise the kind of other dependencies, be it in technology or be it in LNG is a lot less potent.

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And this is particularly the case, and this is the subject of a recent article I had in Foreign Affairs that looks a lot on the technology dependency that clearly the United States— sorry, the EU has on many different American companies. And the argument that I'm going to make there is basically that, yes, That dependency is very real, and it is likely to persist simply because the opportunity cost or the cost of getting out of it, the idea that Europe should promote directly or indirectly the creation and development of a wide range of technology services to basically avoid importing those, from, or buying them from, US companies would be prohibitively expensive. And also that once again, as I said earlier, once you're out of the military dependency on the United States, the risk of a weaponization of those technologies are actually, as Anjali said in the introduction, are what I would argue turns into an acceptable risk. Also acceptable because Unlike the situation very clearly with the Russian gas supply historically, and arguably to some extent also from supplies of critical minerals from China, the supply, the dependency that Europe has on technology services acquisitions from the United States, as well as LNG, is based on commercial relationships.

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And what is the actual probability, in my opinion, that those relationships can be weaponised, given the share of non-US revenues that the European market holds for these kinds of companies, I think ultimately again, it's very low and therefore has become an acceptable risk. And with that, I have been told by my moderator to wrap it up, so that I will do. Thank you very much.

[00:45:43.44] - Anjali V. Bhatt

Can you hear me now? OK. OK, so we covered a lot of ground there. There's a lot to talk about here. But one of the things that I wanted to start with is— so obviously, we've spoken about how

alliances are important. I think we would all agree with that. And working with allies does actually increase the security of a country when the sort of the supply chains and the relationship works. Like we've seen in critical minerals, and as we might see in other industries, do we think that there will be sort of these more fragmented alliances? You know, you have a group of countries doing critical minerals over here, but then a different group of countries doing different critical minerals over here. How does focusing on sort of these strategic industries rather than alliances and relationships change those relationships and change supply chains?

[00:46:53.05] - Cullen S. Hendrix

I can start on that, but I'm going to offer kind of a narrow aperture, but hopefully it's illustrative of some of the kind of complicated dynamics. Angela, that I think your question alludes to. So the Trump administration famously likes tariffs. You know that part of the story. What you might not know is that they had a Section 232 investigation into critical mineral supply chains. And I did some back-of-the-envelope calculations when that was in process based on the price levels that were negotiated into offtake agreements for rare earth metals from MP Materials. This is Mountain Pass out in Nevada near the California border. And I went into an investor seminar, and I told them, OK, these are going to be the price wedges that need to be created by the Western policy environment in order to enable these kind of things. And then the Section 232 came in, and it did not include really any information at all on tariffs. And the reason it didn't include that information is because the administration came to the conclusion that there was effectively no domestic sector to protect, so that this was not going to fit into the standard playbook that the Trump administration has tried to use in the past in order to bolster economic security or resilience.

[00:48:09.19]

No, I was going to come to that. But here, I will say this. What the Trump administration has done under the auspices of FORGE, and then also a public-private partnership, commercially-oriented stockpile initiative that's being developed, is take an incredibly multilateral approach to try and develop mineral security. And not just in terms of going out and finding partners where you can mine from, but also places that will host some of the processing capacity, which is the real choke point in these supply chains that China controls. And so it— what's interesting to me about this is that this recognition that there's this overwhelming need or desire in the West to diversify or to reduce dependence on China is actually manifesting, at least in the Trump administration, as one of the most multilateral policy spaces they have.

[00:49:01.46] - Jacob Funk Kirkegaard

Thanks.

[00:49:01.47]

No, I mean, I basically agree with that. I mean, I think that actually this sort of future scenarios of a fully fragmented multipolar global economy, I don't think will prove viable. And I think if you look at the positions of every country or most countries in the world that are not China and the United States, it's one of ever-deepening bilateral or plurilateral trade relations. And as Collin mentioned, even including the United States on the issue of critical minerals. So I think while there's no doubt that the overarching, you know, center of security-related alliances of the United States will gradually decline, both as a function of policy intent by the Trump administration, but likely also as an outcome of, you know, in the medium and long term, necessary fiscal trajectory correction in the United States. But that is not the same as a fully fragmented sort of pre-World War I economy. I actually think we will find that the global economy and globalization more broadly is a lot more resilient than we often give it credit for.

[00:50:32.46] - Warwick J. McKibbin

I pretty much agree with the previous comments, but just to point out that the US economy is only 15% of global trade. So there's 85% of the global trading system out there. Which can increase cooperation and which is actually following Mark Carney's, Prime Minister of Canada, strategy of enhancing multilateral trading relationships. I know Australia has reached out to India, into Europe, into parts of Asia, and so this is accelerating the multilateral developments in the world, not retarding it. And in fact, the US policy switch has created this move towards diversification. As Jacob mentioned, one of the optimal strategies is to diversify, and this has enhanced that diversification timeframe. So I think you'll, after whichever the next administration is, this is a permanent shift in the reliability of the US as a global trading partner as well as a security partner, and I think that increases the need for diversification and cooperation in the world, in the 85% of the world trading system that's still out there and believing in openness and trade.

[00:51:40.07] - Jacob Funk Kirkegaard

OK.

[00:51:40.58] - Anjali V. Bhatt

I have lots of questions for you guys. We'll also leave some time for audience questions. So if anyone has questions out there, start thinking of them. I'm also going to jump around a lot because there's a lot of things that we could talk about here. So let's talk about energy. So it's

easy to look at these disruptions in oil and gas channels, whether it was Russia's invasion of Ukraine or the Iran war now, and say, oh, these are uncertain supply chains. Countries are going to switch to renewables now so that they're not so reliant on these dirty fossil fuels that, you know, might get locked up in a blockade. It's obviously not as easy as that. If it was, we would've seen it by now. You know, not least given China's outsized roles, as we've spoken about in different points of the supply chain. But besides, you know, abundant natural resources like, you know, solar and hydro, What kind of characteristics would make a country better positioned to speed up their green energy transition without having to give up much on security?

[00:52:45.29] - Jacob Funk Kirkegaard

Carbon taxes. I mean, you know, what you need to promote this kind of structural, you know, shift in the energy system is a shift in relative prices.. And, you know, that's what a carbon price gives you. And I think, you know, sort of in line with my overall argument earlier that Europe so far has avoided doing stupid things, one of the other things they have avoided in the most recent crisis is to do the stupid things of fundamentally scaling back carbon pricing in Europe. The ETS system in the EU will be updated, quote unquote, but it will not be fundamentally scaled back. And I think that's really from a policy point of view, given the maturity of a number of renewable energies, whether it's solar or wind, which are not industries that require sort of large-scale public subsidies, etc. For their adoption anymore is probably the most important thing you can do to achieve the kind of resilience that you talked about.

[00:54:01.43] - Warwick J. McKibbin

I think one of the ironies of the Iran war is that it's actually highlighted the fact that if you increase the price of fossil fuels, any type of fossil fuel, particularly liquid fossil fuels, you'll get substitution away from those fossil fuels. And so ironically, President Trump is one of the great environmental advocates towards taking action on climate change. And not just on the energy generation, but even on fertilizer. People have been arguing for green ammonia for several years, and there was no economic basis for pursuing that, even though there were countries like China and a little bit in Australia of investment in green ammonia. It was never seen to be economically viable. Well, now it appears to be much more economically viable than it was 3 months ago. And so these sort of shifts will both give incentives for countries to move restructure their energy systems, but it will also give the capacity for new technologies to come on board more quickly than they otherwise would have.

[00:54:55.54] - Cullen S. Hendrix

I'll be very quick on that. I mean, I think that if you're a developing or middle-income country that has significant critical mineral endowments and you have access to hydropower— I'm looking at you, Brazil— you have a really significant opportunity to participate meaningfully in this transition in a way that will not necessarily even undercut your ability to export fossil fuels in the short term. So, I mean, if you have the convergence of that kind of those two structural factors, you have a role to play that's, that's positive in generating these global energy transitions. And just as a point, even in the United States, where energy transition has been completely deemphasized from a policy perspective, last year globally, 86% of new grid installations were renewable. Does anybody have a guess at what that percentage was in the United States? It was '92, under the most climate-skeptical presidential administration we've ever had. The better mousetrap is here.

[00:55:59.38] - Anjali V. Bhatt

Okay, we've got someone at the mic.

[00:56:05.28] - Nicolas Véron

Nicolas Véron here at the Institute. I apologize for asking a slightly parochial European question, but I'd like to follow up on Jacob's narrative. Which has been Europe not doing stupid things. Adam Posen, our president, this morning at the trade event suggested there was a kind of choice for Europe to go either into a form of European superpower strategy competing with the US and China on similar terms versus a strategy of keeping the lights of, you know, an open global economy to the benefit of Europe, but also to the benefit of the world. And obviously he advocated the former. So here's my question. In traditional European terms, a more open economy orientation was often associated with the UK, which left the European Union 5 years ago, 6 years ago. Jacob, as somebody who comes from Nordic Europe, is it really the case that the EU has been able to keep that orientation despite the absence of the UK? Can you give us a sense of how Brexit has changed that equation and whether really Europe will be able to keep avoiding stupid things going forward? Thank you.

[00:57:32.10] - Jacob Funk Kirkegaard

Sure.

[00:57:32.44]

I mean, I think the, the, their— if you— all you have to do is look at the number of concluded free trade agreements, you know, before or after Brexit to conclude that the quote-unquote loss of traditionally free market UK has not had a discernible negative impact on that in the EU. And I

think if you look at You know, one of the aspects of the war in Ukraine and the sort of geographically asymmetric rearmament in Europe is that if you associate stronger militaries with positive economic, broader political effects, then it strengthens— the countries rearming in Europe are also traditionally the most free market oriented. Wants. And therefore, I think absolutely the EU will be able to sustain that outlook. And I think the— on the other hand, the argument that the EU is aspiring to compete with the United States as a superpower, either economically or obviously militarily, is simply not true. What the EU aspires to, or what Europe aspires to, is the ability to deter Russia on its own without the United States, which is a much more restrained and absolutely achievable both fiscally and militarily option.

[00:59:09.41]

So—

[00:59:09.49] - Anjali V. Bhatt

Are there questions out there? Because I have many if there aren't any out there. Sure.

[00:59:23.08] - Ted Truman

Ted Truman, formerly Peterson, now at the Massimiliano Romani Center for Business and Government at Harvard Kennedy School. A mouthful. So in the absence of any other questions, I have two.

[00:59:39.16]

So I think so, given all this energy side, what about coal?

[00:59:46.09]

My assumption is on the margin, but not significant. And maybe this is more for Jacob. What about the United Kingdom in all this?

[01:00:04.14] - Cullen S. Hendrix

Okay, so on coal, I mean, yes, it, it, it's definitely part of the story and it's offsetting some of— especially in places where there's a lot of legacy installation. People's Republic of China would be a good example of that, right? This— you can easily begin moving back in the direction of coal being in the mix. It's also somewhat ironic that both in China and in Indonesia, coal-fired power is being used to build the renewable technology that is eventually going to replace it. I do

not think that it comes back into the energy mix in a major sustainable way. Again, the better mousetrap is here, and even though this is likely going to exert upward pressure on the prices of the commodities that go into renewable technologies, and presumably the sticker price there, it's, it's being driven by a shock that is having the same dynamics, or the same effects, in fossil markets. At effectively the same time and also providing sort of the best argument for indemnifying yourself and being on the import-exposed kind of vector of geopolitical risk indefinitely.

[01:01:06.02] - Warwick J. McKibbin

Can I just sort of add to that? The price of coal has gone up about 15%, which means this relative to renewables, it's become less competitive. And so it's actually moving countries and companies away from coal-based power generation.

[01:01:23.27] - Jacob Funk Kirkegaard

And obviously, if you have any kind of carbon price, coal is dead. You know, it's quite simple. I mean, on the issue of the UK, I mean, I think obviously this is basically a domestic policy question in the UK, but my sense certainly is that actually one of the big domestic trade-offs between economic security, economic security and other things in the UK is what a tremendous failure Brexit has been. Because the alternative to EU membership was always in a more or less abstract way, the transatlantic partnership with the United States, which obviously have now been replaced in the UK political debate by more or less an active campaign by the current Prime Minister Starmer against the Trump presidency. And therefore, I think trajectory-wise, the UK will not leave, but rather become ever more aligned with the rest of the EU. The direction we can or the speed we can debate, but again, directionally, I think it's very clear.

[01:02:51.10] - Marcus Noland

Marcus Noland here at the Peterson Institute. I would like to congratulate Warwick McKibbin for attempting to define the term economic security, because when I enter into these discussions of economic security and the related term that's come up several times this afternoon, resilience, I am reminded of Potter Stewart's definition of pornography— not his definition, his characterization of pornography.

[01:03:18.40]

I cannot define it, but I know it when I see it.

[01:03:21.13] - Anjali V. Bhatt

Mark, do you have a question?

[01:03:22.32] - Marcus Noland

Yeah, I do. And the question is this, and it's an important question.

[01:03:26.19] - Cullen S. Hendrix

I want all three panelists to address it. These, to achieve goals of resilience or economic security, are going to require costs of various sorts.

[01:03:40.31] - Jacob Funk Kirkegaard

The benefits are relatively amorphous. How do you persuade politicians and the public that undertaking these costs is advisable when the benefits are very hard to identify?

[01:04:02.49] - Cullen S. Hendrix

Well, I mean, I guess in some instances, right, we might be getting a reasonable test case for this now. So let's assume that everything I said is true and that this is going to be worming its way through these commodity markets. Let's assume we get a bad El Niño and we get some sort of geopolitical tensions flaring up in the South China Seas, and you actually do get physical supply disruption of some of these renewable technologies, but also these critical minerals that underpin the defense industrial base. When you don't have enough interceptor missiles to keep the base safe, and then when people are injured because of an attack, and they can't get access to an MRI because they don't have the requisite critical minerals that go into those supply chains as well, it starts to make the cost, I think, a little bit more apparent. And so, you know, right now might be a complicated time to be having these kind of discussions, but it's a good time to be having these discussions because the actual costs are pretty manifest and they're not isolated to sort of the main kind of commodity or even the main supply chain that we associate with the geography.

[01:05:08.46] - Jacob Funk Kirkegaard

No, and I would absolutely agree with that. And I think if you look at the broader European response to, you know, being resilient, choosing to be resilient against, you know, Russian gas dependency, well, it was obviously not taken very seriously by the principal economies, notably Germany, etc., until The war happened, but then you basically had a slogan that said, "Getting out of Russian fossil fuels to get out of all fossil fuels." And once the gas price hit, you know,

went up by 500%, as Colin says, well, then it's not so difficult to suddenly argue that this is necessary. So in some ways, we certainly have obviously at the enormous and very unfortunate cost to Ukraine, but the Russian attack allowed Europe to crystallize these very trade-offs in a very, I would argue, constructive way.

[01:06:16.31] - Warwick J. McKibbin

And in the minus 2 seconds that I have, I think an abstract way of thinking about this is to try and create markets for things which are missing. So the reason we don't understand the benefits of environmental dealing with the environment is we're not pricing the environment and the gains to the environment. So if you can actually price carbon along Jacobor or my own approaches, bring that to market and have the benefits of reducing carbon is to reduce the cost and that can be priced, then people will respond to that. So I think focusing on the longer-term issues to price longer-term problems and bring them into market-based mechanisms that people can respond to is a way forward. And there's an entire chapter in your edited volume on climate change that I wrote, which came out last week, which I would refer the audience and those online to take a look at.

[01:07:07.13] - Anjali V. Bhatt

Okay, we're going to count 2 minutes over as being on time, so everything is fine. Thank you so much to our panelists for joining us, and thank you so much to you joining us. We hope to see you at the rest of our spring meetings events.