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LESSONS OF THE RARE EARTHS SHOWDOWN

ARNAB DATTA ON HOW TO FORTIFY AGAINST FUTURE SHOCKS

CARDIFF GARCIA: Hey everyone, Cardiff here.

You may have heard that the US and China are in a trade war, among other geopolitical disputes. And a few weeks ago, things escalated. China put in place new controls on its exports of rare earth elements.

Rare earths are used in making all kinds of cutting-edge goods — semiconductors, electric vehicles, batteries, smartphones, laptops, lasers, military equipment. And China is by far the world's dominant player in this market, especially in refining rare earths into usable products that can then be used to manufacture all the goods they're needed for.

And what China's new export controls did was make sure that it was harder for the countries that need them to actually buy them. To access them. It was an aggressive move. It also highlighted a place in which America and other countries — its allies — are vulnerable.

And then after US President Donald Trump and Chinese President Xi Jinping spoke, each side agreed to roll back some of what it had threatened, and China announced that it would delay implementing the rare earths controls for a year.

So what now?

Today's guest is Arnab Datta. He's the Director of Infrastructure Policy at the Institute for Progress and Senior Counsel at Employ America. Arnab has just come out with an incredible new paper along with his colleagues. It's all about how the US can become more resilient against threats like this one — and against shocks like this one — if the threats actually end up becoming realized.

And the lessons of his paper extend well beyond just the specific threat of a shock to America's supply of rare earths. It goes to the heart of the dispute with China itself — and more broadly, what's the best way to respond when a single country has taken steps for decades to distort the global market of a product that the entire world

depends on? How can the US counter something like that, and how does it do so in a way that isn't ultimately counterproductive — in such a way that embraces American economic values like innovation and competition?

Arnab has been working on questions like this for years, and policymakers listen to him. In fact, one of the ideas he and his colleagues came up with has already become actual policy. So I couldn't wait to have a chat about the rare earths episode and its huge lessons for the American economy.

Here it is.

Arnab Datta, welcome to *The New Bazaar*.

ARNAB DATTA: Thanks for having me, man. Great to be here.

CARDIFF: Super simple question to start. In the rare earth dispute, what do you think China wants?

ARNAB: Yeah, it's a great question.

I think there are basically three or four key things here. One is they're certainly looking for negotiating leverage ahead of a potential Trump and Xi meeting. I think this was a lob in that sense, more broadly in the context of the trade war that's going on. They have this enormous choke point over us that they hold, and I think they were using it to show that they could harden their resolve and impose costs on the US in ways that could be really detrimental — and that would help them with the broader leverage that they needed.

CARDIFF: It certainly got our attention.

ARNAB: It certainly has, yes.

I think those are certainly the most paramount in the context of the trade war. But also, these are inputs that are necessary for a range of things you mentioned in your opening — in the defense sector, automotive, just commercially very necessary. And so they can use that, and they're potentially trying to weaken our domestic industries.

CARDIFF: And military too.

ARNAB: Exactly. And military, yes.

And fourth, I think this is a pattern that we've seen over the last few decades, where they have used export controls, amongst other tools, to really deepen their dominance in the sector. So I think this could be seen as another gambit.

CARDIFF: Multi-pronged goals, right?

ARNAB: Yeah.

CARDIFF: So we had an earlier episode with a scholar named Evan Medeiros, who used to work on China–US policy in the Obama administration, and has since then studied the different legal tools that China has been coming up with for the last six or seven years.

One of the points he made was that these tools — which include these rare earths export controls — are designed for negotiations just like this one, these sort of protracted trade-battle negotiations. And what he said was that China can't really compete with the US tit-for-tat on just tariffs; the US buys way more from China than China buys from the US. So instead, it came up with these legal tools.

It has things like, I think they're called blocking tools, which make it possible for Chinese companies to survive American economic sanctions. It can use antitrust tools against US companies that operate in China. And it can do things like the rare earths export controls. But what he said was that they're more targeted and flexible than the tools of the past, and that meant there was also some give.

And in this case, we kind of saw it. The delay was implemented for a year. It wasn't just this blanket ban that's now Chinese government law; it was something that seemed designed for a negotiation.

Is that your impression as well?

ARNAB: Yeah, and it's important to know that this isn't the first time even this year that they've done this. In April, I believe it was, there was an initial round of restrictions as well.

And I think the thing that is interesting about these ones is how holistic they were in the sense that it was not just the product export controls; it was also the equipment used to manufacture them, and in a sense also the knowledge. Because workers who have knowledge — domestic Chinese citizens—

CARDIFF: Like process knowledge, right? The ability to make this stuff. Managers who know how to do it.

ARNAB: Yeah. They would have to receive licenses to do this work. So I think it's a very holistic set of restrictions, and they deployed all the tools to some extent.

CARDIFF: And those licenses can be given or not given selectively as well, right? That's another sign of the flexibility of these—

ARNAB: Yep, absolutely.

CARDIFF: That's interesting. How would you characterize the risk to the US of something like a rare earth export control, limitation, or an outright ban? Give us the stakes here — how big a deal is this?

ARNAB: Yeah, it's a huge deal. These are integral inputs, as I said, across very key sectors in the economy and our national defense. Right? And so everything from oil refining — which relies on lanthanum and cerium — to battery technology, which relies on lithium and rare earths, to the defense sector, where rare earths are really important to produce magnets that are heat resistant, that can be used in precision-guided missiles, for example.

These are necessary inputs. And so if you saw China, which controls 70 to 90% of processing of these inputs — over 90% in some cases — cut that off, that would just reverberate across the economy and our defense sector in a way — I mean, I think the closest analogy is what we saw with semiconductors during the COVID pandemic, where we had this shortage and you saw that come up in so many different instances.

CARDIFF: The prices went way up. There—

ARNAB: Exactly. Cars. Whether it—

CARDIFF: In some cases, just couldn't get them. Forget about the price.

Yeah. And when you say 70 to 90% of processing capacity, to be clear, that's for the whole world. One country controls 70 to 90% of the ability to refine rare earths into something usable for the entire world.

It's not just the US that's vulnerable here. It's also American allies and, frankly, American non-allies. It's everybody.

ARNAB: Yeah. And it's really something too. It's not easy to build that capacity. There are three factors that make it very difficult for us to build that in short order here in the US.

One is they have this concentrated market power already. There's extreme price volatility in these sectors, and we don't have a market infrastructure by which prices are discovered. And so it's not just that they could impose the restrictions — it would be very difficult for us, without a very concerted effort, to develop that capacity.

CARDIFF: There's a part of your paper where you tell the story of how China did manage to establish that kind of dominance. Because it's not like other countries lacked the ability to have developed a market like this. China ended up with that big of a share because, as you said, it made a concerted effort — but it also had to do some things that prevented other countries, or at least disincentivized other countries,

from doing something similar, so that it ended up in a position where now everybody else is vulnerable to what it wants to do.

Let's tell that story. I mean, where does it start? Does it start in the 90s? In the 2000s? What happened?

ARNAB: Yeah. So I think it starts with a lot of serious effort in the 90s, but we can actually even go back. If we just take rare earths: China set up a— actually let me zoom out.

This is a pretty new development. We have, for example, a mine in California — the Mountain Pass mine — that has been producing rare earths since 1953. And we used to have processing capacity here and in other places.

In 1975, China sets up a rare earths office and slowly starts experimenting with various kinds of industrial policy. In the 90s, that ramps up, and there's a very concerted effort for them to produce…

Yeah, so: you have production quotas, you have export quotas, permitting — a lot of different tools of an industrial policy essentially to make—

CARDIFF: To be clear, this is all established by the Chinese government?

ARNAB: Yes. And sometimes done through state-owned enterprises or private intermediaries that have a strong relationship with the government.

CARDIFF: Sort of like a top-down plan to start doing this.

ARNAB: Exactly, yes.

CARDIFF: This is not a markets-based decision.

ARNAB: Yeah. And it's not profitable at first. But through time, they develop technological expertise. If you look at their patents in processing, for example, they really shot up in the 1990s, 2000s, and beyond.

Yeah, so they were doing this, and they really made a concerted effort to make processing that industrial anchor point. Because resources can be sourced in a lot of different places — we have a lot of resources here. Processing is very capital-intensive, and it's something you have to invest quite a bit in. So they made that the anchor point. It's also higher on the value chain.

CARDIFF: Refining, you mean? Like, getting the thing out of the earth is not a very technologically impressive thing.

ARNAB: Yeah.

CARDIFF: But turning it into something that can be used to make all these electronics, all these semiconductors, and other things, that's a much more impressive thing. That's what countries want.

ARNAB: Exactly. Yeah.

CARDIFF: So to back up for just a second: in the US, I think you just said something interesting, which is that we technically have these rare earths under the ground in different places. We could get them, and then we could refine them if we wanted to. China ended up doing it presumably because they could do it more cheaply, or because they decided — from the top down — that they were going to do it, and they were going to crank out all of it that the world needs, and the US essentially didn't have to do it. We were just going to buy the stuff from other people, from China.

ARNAB: Yeah, exactly. And when they're producing unprofitably, it's very difficult for US/Western competitors to compete. Commodities throughout the value chain are a pretty thin-margin business. And so when those margins are shrunk by overproduction, by excess capacity in the market, you run into this problem: where we have higher cost structures, or companies that are technologically innovative, where it's a lot of capital upfront, it's really difficult for them to get the investment they need to invest in those new technologies.

CARDIFF: It's interesting too that back then, at least, maybe we just didn't see that at some point in the future this would become a national-security problem, or even an economic-security problem from the standpoint of having them possibly be cut off when we need them. So we didn't do anything to counter China's activity.

The overcapacity, the overproduction — I think a lot of people, including probably a lot of economists, would say: "Well, who cares? We get the stuff for cheap. It's like getting something for free. Why would we complain? We'll just make other stuff using these refined rare earths, and it'll be fine." And it seems like, I don't know, for a little while maybe it was fine.

Now it's not fine because China has emerged as a very potent geostrategic rival to the US. But back then, I guess it just wasn't that big a deal. And the free-trade consensus would just say: "It's okay, it's fine."

ARNAB: Yeah, exactly. I think whether you strongly believed this was the result of a perfectly free market, or believed that China was really putting their thumb on the scale, there was a question of opportunity cost and who's best equipped to do this. And we thought that, in the WTO era, China would grow as a competitor — surely — but one where we could collaborate and have economic integration with. And that this type of control wouldn't be exerted to put political pressure on us.

I think there was some bit of a consensus behind that, and that's totally shifted.

CARDIFF: Yeah, it's interesting because instinctively, and on most things, I'm a free trader. I tend to come at ideas related to industrial policy — not saying we should never do them, but just instinctively — I look at them with skepticism: show me it's going to work.

But China has always been, I think, a really difficult case. In the past, there are many well-chronicled instances of the Chinese government engaging in corporate espionage, unfairly privileging its own companies, stealing trade secrets from foreign companies. So I just think that here, it's tricky — precisely because China has emerged as such a big, prominent rival.

And now you're talking about something different from that. This isn't just about being a bad actor in the global trading environment. This is also something China may have done originally just to build up domestic capacity. It seemed like an industry that made sense to them, and it would then go on to later have these cascading effects on the rest of the world.

So I just think China is a really interesting example of where the abstract principles of trade, free trade — which I believe in — run up against a really difficult, challenging reality.

ARNAB: Yeah, and I think it was a very conscious choice. I mentioned the first part — the robust industrial policy they used to anchor processing. There's a second aspect to their strategy, which was this problem of market infrastructure.

China stepped in to establish market infrastructure for these critical minerals. What do I mean by market infrastructure? It's essentially the means by which prices are discovered, transacted for particular goods in the economy, and then transmitted throughout the economy. If you look at oil, for example, we have benchmark contracts, we have exchanges that trade this, you have traders doing billions of dollars in contracts day to day. And you have transportation infrastructure aligned with these contracts. You have it for mature metals as well, like copper or iron ore. You don't have that for rare earths.

And China, in the wake of this huge boom from 2000 through 2008 — where China was producing a lot of this material, there was insatiable demand, that was being met by Western producers as well. And that runs headlong into the global financial crisis.

And so you have this huge capacity overhang, and that kills a lot of producers in the West. And processors. It also really hurts financiers. Banks, trading firms, all close their commodity desks.

And in that wake, China steps in and says: “Okay, we’ve built up this huge industrial capacity. Now we’re going to build this market infrastructure.” So they set up the Baotou Rare Earth Exchange in the mid-2010s with the explicit purpose of playing a greater role in pricing rare earths globally. So now they’ve got the processing capacity and the industrial capacity and the market infrastructure.

And that leads to their third prong, which is essentially an international asset strategy. Because they can now purchase from anywhere in the world, or buy assets from anywhere in the world, and feed it into their processing at home. And with the ability to use their market infrastructure to determine prices, they can crash the value of assets owned by Western companies.

So you saw this with Freeport — a very large commodity company that owns a lot of assets. They were going through financial troubles because of a lot of prices going down —

CARDIFF: An American company.

ARNAB: Yeah, an American company. And so, in the mid-2010s, they sold a mine in Congo — the largest cobalt mine in the world, I believe. And they sold it for peanuts comparatively. China was able to pounce. China Moly Corp bought that mine. And now they have that asset.

And so throughout the value chain, they’ve basically got control one way or another, and they can exert that in various ways.

CARDIFF: Yeah, it’s interesting because it sounds like the US was never really able to even get a functioning financial market for rare earths off the ground. It just didn’t happen. And people, I think, can underappreciate how important that is.

If you’re an investor and you’re potentially interested in investing in a rare earths mine or a refining company or something like that, you need to be able to hedge your risk. You need some expectation that you’ll have an accurate, transparent price for what you’re buying, and also how much it will be worth in the future. Understanding a potential future revenue stream in an environment with tremendous uncertainty — it’s almost like a financial market just can’t get off the ground.

Which is interesting because in the US, we obviously have a tremendous amount of wealth. We have some of the deepest, most liquid financial markets in the world — for practically everything else. But nothing like that for rare earths. And again, part of the issue is that China so dominated the market that it could never emerge. But also China, I guess to some extent, had control over the very price of these things. How did that work?

ARNAB: Well, yeah, so there are a number of different factors. One thing is that so much of it is purchased by China on the front end of the processing. So they can use that as a lever. And they have so many assets that they can determine how much supply to keep on the market, how much to add — and that's fundamentally a supply-demand question.

But then the market infrastructure I mentioned is the means by which that is translated throughout the world, in contracts.

To make it really concrete, let me give you an example. Tesla has a gigafactory in Texas where they need to purchase lithium. They purchase spodumene to refine it, which is a lithium precursor. They can go to North Carolina, which is in the spodumene belt — I didn't know until several, a few years—

CARDIFF: (LAUGHS) Who did know?

ARNAB: We have a spodumene belt — that's what it's referred to. It has a Wikipedia page and everything. And they can — there are producers in North Carolina that could sell them their spodumene. But as is standard practice, they would have a reference price in that contract that would go up and down. And the contract value will go up and down based on what global prices are. And that global price is a Chinese price.

And so if China's flooding its market or overproducing into its market, even though there is no relationship to China — no relationship to the Chinese economy — that transaction between Tesla and a North Carolina company, that contract value goes down for the producer. And now the risk is ultimately asymmetric. Because if you are undersupplying into a market as a producer, you're just getting suboptimal profit. But if you're producing when there's oversupply, you go bankrupt. That's the risk. And that's what scares every potential producer.

CARDIFF: So you just don't start.

ARNAB: Exactly. And you keep capacity—

CARDIFF: And if you're a potential financier and you know that the constant, ever-present risk is that China might flood the market, you won't bother. They have that much control over the potential price of it. It reminds you almost perfectly of the olden days now, when OPEC could just make a decision and suddenly the price of oil would swing to whatever they wanted it to because they would either restrict the flood of oil they were producing or increase it and ramp it up.

ARNAB: Yeah, exactly. And even though the demand is expected to skyrocket for all these — because of how that is priced — it doesn't make a difference on that investment question. Investors generally know we're going to need a lot of rare

earths. They don't know what the price of that is going to look like. And so why would you invest in it?

CARDIFF: There's a nice quote from your paper where you say this succinctly and quite well. Here's what you write:

"The most important commodity markets, such as oil or copper, feature benchmark prices, futures exchanges, and deep liquidity. For most critical minerals, this is not the case. Transactions are opaque and bilateral, and the price discovery mechanisms that exist are all dominated by the Chinese market. As a consequence, producers and consumers don't have the tools necessary to hedge away the risks of investment. Investors lose confidence in these markets and walk away."

And that's what happened, right?

ARNAB: Pretty much. Yep.

CARDIFF: What else do you think held the US back? What else could the US have done during this time to at least try to offset some of this? Where was the missed opportunity? Was it just not recognizing that this actually was a risk — a potential future threat to America's ability to make some things that are super important to the American economy?

ARNAB: There is a question of urgency. This is not the first time China has used its rare earth power to exert control. It's not even the first time in a national security context. In 2010, I think, 2011 — there was the Senkaku Island dispute with Japan, and they imposed rare earth restrictions on Japan, and it shot prices up. But we knew that this was coming.

The question is: it's capital-intensive, so we need some government intervention. And I think it's taken some time to get around to a new consensus that you have to do some intervention in these markets, where fundamentally — whether it's a question of whether it's a free market or not — the market structure is broken in a way that is hindering—

CARDIFF: There's literally no market.

ARNAB: Yeah, exactly. And it's hindering our national economic security.

CARDIFF: The way we think about markets, there's no real market for this. So essentially what you're proposing is to establish one. Let's talk now about potential US responses in the present moment.

So we have what appears to be at least a one-year reprieve. China has said that it's going to "study" the rare earth controls idea for a year. In exchange, the US gave up some things. It looks like, for now, there's a little bit of a mini détente. It's not

forever — it might ramp back up again — but that's what's happening right now. The US ended up lowering some tariffs or not raising them to where it said it was going to raise them, and China has put in place this delay.

In the meantime, what could the US do in the future if this happens again? And you say essentially there are two options. One is: you could just make concessions to the Chinese and keep buying this stuff from them, but on trading terms that are at least partly dictated by China. Or the US could develop a supply chain of its own. And obviously your paper is about option two — how to actually do that and how to use the blueprint of Operation Warp Speed.

Which — just to remind everybody — was the Trump first-term administration plan to develop a vaccine really quickly. And it did. The US developed a vaccine in, I think, nine months or something. It was an absolute record-shattering amount of time. How do we take those principles and develop our own homegrown supply chain to at least partly offset the threat of a shock like this in the future?

There are a few different principles that you lay out. Why don't you take us through them?

ARNAB: Yeah, so I think the three principles for response that we really focused on were:

One, we should reward competition and innovation. These are still hallmarks of what has made America the premier economy in the world, and that's something we should make sure we continue to foster.

Second, this needs to be an allied partnership approach. We should be working with allies that we have. I'm Canadian originally, and Canada's very good at mining. Australia. There are countries that have a lot of expertise in these fields and a lot of resources. And we should be building those economic dependencies and helping them also reduce their dependency on China.

CARDIFF: We'll get back to this, but that is not the approach it seems so far that the US is pursuing under the president. But anyway, go—

ARNAB: Yeah. And then I think a third piece of this, when it comes to building our own domestic capacity, is we need to create more certainty in the permitting process. Permitting these projects — whether it's mines, certainly, but even processing, anything with federal support — is going to run into a gamut of procedural environmental laws. And that creates a lot of uncertainty as well. That exacerbates the investment problem that I mentioned earlier. And so we need some certainty there too.

CARDIFF: On permitting, you mean that there are laws on the books that say you need to get a permit that shows you're meeting these environmental standards. But to say it that way almost sounds like it doesn't sound like that big a deal. But the point is that it can take years to get those permits, which means there are years in which a project doesn't get off the ground. And if you're, again, a potential investor or somebody who wants to run one of these companies, you might not bother starting because you're like, well, the procedural hurdles here are gonna take forever.

ARNAB: Yeah. And I really want to make an important distinction here: I do not advocate for weakening any substantive standards. We're a rich country, and people should feel safe that their water sources are going to be safe, that air is going to be safe. There's a distinction, though. We have a number of different laws that offer no substantive environmental benefits, but we still have to do a significant amount of environmental review, let's call it.

So the best example of this is the National Environmental Policy Act — NEPA — which just exerts enormous drains on federal resources to get projects permitted. Ostensibly — I'm using air quotes, people won't be able to see that — but there are no actual substantive benefits that come from that. It's entirely a procedural law, and it creates enormous delay in the permitting process. But also, because it's a litigation hook, that can really just blow out the—

CARDIFF: I mean, some group can use that law to sue you, and then the lawsuit takes seven years. In that time, you still can't start building until the lawsuit is over. And then once that's over, some other group can sue you. You know what I mean? That kind of thing. It just goes on and on and on.

ARNAB: And interest rates are pretty high right now, so it's not a great time to just be holding (CHUCKLES) cap–

CARDIFF: Yeah. Sitting with money. So those are the first three: competition and innovation, strengthening our relationships with allies, and then streamlining this permitting process so that it moves fast. Again, not weakening standards, but making it a lot faster, a lot easier to start a project, to get through these hurdles.

There's a fourth one.

ARNAB: Yes. We should absolutely not trade any of our foundational technologies. We should not give up any controls. Any of the export controls that we have on Blackwell chips, for example, should not be relaxed.

CARDIFF: These are advanced semiconductors.

ARNAB: Yes, exactly.

CARDIFF: The background here is that there was some speculation that, as part of the most recent negotiations between President Trump and President Xi, that Trump would put these chips back on the table. These are chips that are made by the US, by Nvidia.

And the question was, would the US, which as of right now does not allow the sale of those chips to China for national security reasons, start allowing the sale of those chips? In exchange for China giving up its rare earths export controls, we give up our controls on those chips. And what you're saying is, "Do not do that." And your colleagues have also written quite forcefully that we should not do that as well.

So why don't you take us through what they write and what you think about that?

ARNAB: If you believe that AI is a foundational technology of our future, we have an enormous edge in that because of our production capabilities for these really highly advanced chips.

Right now, we have controls on those. So we do not allow those chips to be exported to China, the very advanced ones. And by allowing them, or even allowing the 50% version of them.

CARDIFF: Pretty advanced chips.

ARNAB: Pretty advanced chips, you could see essentially in some scenarios, China overtaking our compute ability, right?

Where they would basically be able to control more of the compute that is happening in this foundational technology.

CARDIFF: Of artificial intelligence?

ARNAB: Yeah, in artificial intelligence.

CARDIFF: Right now, we have a lead in this really incredibly important technology of the future. It was a homegrown lead that we built, and we risk giving that up if we end up selling these chips back to China.

ARNAB: Yeah, exactly. And I think it's important. There does seem to be strong consensus even within the administration that this is a bad idea. Since this was on the table, ostensibly, in news coverage, since then, it doesn't seem like it was. The president mentioned that he didn't discuss Blackwells in the trade talks.

And so it's hard to have a sense of how on the table this was, but we should absolutely not be doing it. We should instead be building our own resilience.

CARDIFF: I wanna talk a little more about principle number one, which is rewarding competition and innovation. You've been working on this idea for a couple of years now, called a Strategic Resilience Reserve, and part of the response to China, and part of the response to this rare earths — I don't wanna call it a fiasco, standoff, whatever you wanna say — is to develop this thing, the SRR, the Strategic Resilience Reserve.

What is it? How would it work?

ARNAB: So the first time we put this out into the world, I wrote an article with Daleep Singh where we built off of the model of the Federal Reserve. The Federal Reserve plays a role in building stability and resilience in our financial markets.

We took that and said, "How could this apply to commodity markets where there is a lot of volatility and a lot of market challenges — the infrastructure challenges that I mentioned earlier — and how could you apply that model?"

The idea is you have a government corporation, essentially, that is stood up — independent, technocratic — that is doing real-time analysis and research, evaluating our vulnerabilities, and then designing interventions that can take a market-based approach, that can be designed in a manner that rewards competitors, and deploy that capital.

There are a couple of features of that. One, as I mentioned, it would be independent, which I think is necessary, because in the same sense as the bond market needs to believe that the Fed's reasoning is coming from a place of independence and reasoned analysis — even if it doesn't agree with it — that's important for private sector actors in these fields.

CARDIFF: That the decisions not be made for political reasons, for short-term political reasons. That they be driven by a longer-term goal.

ARNAB: Exactly. Number two: that entity needs a robust toolkit. These are very diverse markets with a lot of different challenges. You need the right financial tool for the right intervention.

In some cases, that might be more liquid ones — it might just be buying futures contracts, where you are essentially having a price impact, responding to some kind of external shock that is not market-driven in a sense, and you're trading on the futures contract to stabilize things.

It might just be serving as a buyer of last resort when you have an enormous glut on the market and you just need someone to purchase a lot of product and put it in storage. Storage can be a pretty expensive cost and, in these tail-risk scenarios, not something that the private sector really accounts for very often.

CARDIFF: There's something that already exists that you've done some work on as well, called the Strategic Petroleum Reserve. That's been there for a long time. It was a response to the shocks of the 1970s, I believe, and in really, really oversimplified terms, essentially what this reserve does is it has stores of oil.

When the oil price goes way up — maybe because there's a shock from abroad, maybe OPEC says, "Hey, we're gonna stop producing as much oil," and so the price goes way up — this is bad for the American economy. So the Strategic Petroleum Reserve can then release oil out into the market. Essentially, it can sell oil into the market so that the market has more supply, the price goes down, and that's good.

In that sense, it helps to smooth out the price of oil. And by the way, it can do the opposite as well. If the price of oil declines by a lot, then it has the option, because oil is cheap, to buy oil so that it has replenished stock for the future.

So that seems like a kind of model for what you're saying, except instead of for oil, do it for rare earths and maybe other kinds of commodities. Is that essentially what you're saying?

ARNAB: Yeah, exactly. You would want it to basically work in the commodity markets that are integral to our economic and national security. Electrification is an important thing that is happening now. We could imagine copper becoming more important; maybe there is a role for it in copper. That is a more liquid market, but I think that's something that you would want to be guided by technical, reasoned analysis.

CARDIFF: And so one of the ideas that I think you worked on for the SPR and then, I believe, the Biden administration turned into an actual rule, was the idea that we have a fairly big domestic oil-producing market now because of the shale guys, the shale companies.

And so if you get to the point where the price of oil is going up by a lot, then essentially what can happen is that the US government through the SPR, the reserve, can say, "Look, we are going to sell from the SPR this oil into the market to drive down the price of oil, but we don't want to disincentivize domestic American producers from continuing to produce oil. We wanna have that be part of the future security of the oil market as well."

And so what we, the government, can do then is say, "We promise we will buy oil back from you and replenish the SPR if the price of oil drops below a certain point, which then incentivizes the oil producers in the US to keep producing." That's about how it works, right?

ARNAB: Exactly. In simplified terms. And I think it's important to understand that, similar to what I described earlier, producers in the US, particularly in the shale patch, have become less responsive to price increases with investment, right?

Largely because of the bankruptcies that occurred in the late 2010s, coming out of the shale revolution, you've seen this parsimonious investment response to increased prices. And so our mechanism here, through the SPR, is really a means of alleviating that. If you could give them the certainty that at least some of their product will be hedged. For independent shale producers too, hedging can be pretty expensive, and so this is essentially a public option of a hedge that would let them go out and produce with at least some certainty that they're not gonna go belly up in a couple years, when you go through some other tail risk scenario.

CARDIFF: Would you have to seed the SRR, the Strategic Resilience Reserve, with a big chunk of cash at the beginning? How does that work?

ARNAB: So you would certainly need to appropriate some money. I think it is important that the structure of this could lend itself to becoming self-sustaining over time, right? Because if you need an initial infusion of cash—

CARDIFF: You gotta buy the rare earths!

ARNAB: You gotta buy the things.

Largely, the strategy here is going to be buy low and sell high, right? And I think it's important too that a key design feature that we have advocated for is that robust toolkit that I mentioned. And part of the reason for that is right in a time where rare earths are expensive, but you also need to be conceivably procuring it, you might want to pick a financial structure that is not pulling product off the market right now at a time of high prices, for example, right?

There are different ways to financially engineer things so that you're building capacity and resilience in the private market, but not taking delivery, necessarily, at the worst times.

You don't wanna be buying oil when oil is $140. So you can design a contract that allows you to have some escape valves there.

CARDIFF: So the other two planks of your response can help in that regard. One is just making the permitting process easier because then, the private sector will do the work.

ARNAB: Yeah.

CARDIFF: If the permitting process is super easy, you're just going to get more supply from the private sector 'cause it's so much easier to do it then.

ARNAB: Yeah.

CARDIFF: The other is having good trading relationships with American allies, where it's almost like the extension of the market to other countries, but friendly countries. Not the ones that you think in a given moment will pull them off the market or threaten you with it.

Again, I wanna emphasize that is absolutely not the approach we're taking right now, that the US is taking. We have put tariffs on our allies as well as our geopolitical adversaries. I was reading something interesting over the weekend about how actually, we might end up incentivizing more companies to set up their supply chains in China rather than fewer, because what ends up happening is that the reason those companies are in China in the first place is that they have remarkable efficiencies there built up over decades in some cases.

And if those same American companies are worried that we're gonna keep putting tariffs up and down on our allies, why would they bother shifting their production operations to those other places if it just might end up more expensive there anyways?

Might as well keep it in China, where you know what you're doing. You have to be incentivized to move it elsewhere. So that's just one example of how if you have a good relationship with your trading allies, with your strategic allies, that can help when you're trying to counter the potential for a supply shock emanating out of China.

We're not doing that. I just want to point that out. But you make the case that we absolutely should be doing that.

ARNAB: Yeah, absolutely. And I think it's really important too, as a means of resilience. You never know at any given time who is going to be — if you need a lot of capacity to bring a lot of capacity online, you don't know who's gonna be the most equipped to do that in the short term, right?

There might be permitting challenges here that are causing delays to get some mine set up or processing facility set up. If there is a country where we can quickly ramp that up, that's a means that's a resiliency in our supply chain. I think that's needs to absolutely be part of the strategy.

I think one thing to add there is a positive development on this. The president signed an agreement with Prime Minister Albanese, from Australia, two weeks ago, and it was really heartening to see, I think, that they are taking this approach to support the development of liquid, fair, competitive markets.

And so, at least it's good to see Australia's got a lot of these rare earths that we need, a lot of resources. And I was heartened to see that language in their announcement because it does at least signal that they're thinking about different approaches too.

CARDIFF: I'll just say I visited Australia earlier this year, loved that place. So I was also heartened to see that in there as well. We should definitely be deepening our relationship with Australia. That would be great. What else should the US be thinking about as it relates to this idea of fortifying itself against future shocks?

What other applications of this approach do you think there are for the wider US economy? Because some people might hear this and say, "Well, let's do it for everything!" I don't think that's what you're advocating for here, though. You're specifically saying, "This is in response to a market failure. Let's fix that."

Other products, even products that we buy from China: actually, it's fine. If we buy certain electronics, toys, clothing, that kind of thing. Even some of the machinery that American manufacturers use that they buy from China to make the stuff in the US, whatever, all that is fine. A certain amount of commerce is okay.

What do you see as the wider application or the limits of an approach like this?

ARNAB: You see a lot of the usage of economic and national security thrown around. And if you make that box big enough, you can throw everything into it, including toys or underwear. But I think we could come up with a list of technologies that are critical to military intelligence, to energy, to technology that will be a foundation of future competition, essentially, like AI, as an example.

I think that you can think of this type of an approach with that lens. I think more broadly for our economy — Employ America is a macro-focused organization. We should be thinking more about how to bring stability into the economy. And I think there's things like automatic stabilizers, for example, for recession.

Something I think we've talked about in the past, certainly. There are places where volatility is particularly harmful to consumers, to strategic sectors, and to our country—

CARDIFF: And to workers!

ARNAB: Exactly. And to workers. And I think that's kind of where I would really focus my efforts on. These types of interventions to build a bit more resilience and stability into the economy.

CARDIFF: One of the advantages of having something like the SRR, at least as I see it, is that it does start that early burgeoning market, financial market. For a technology which you really need and just has never been done here because of all those disincentives that we discussed earlier.

At the very least, we shouldn't be opposed to that kind of market design. I think especially if it does foster competition. There is a risk though, okay? And a lot of people are nervous right now about the government, for example, taking a stake in a company like Intel. I think the concern there is, well, now if the government has a stake in Intel, what does that mean for Intel's competition?

That now they're competing directly against the US government. The government may have an incentive to favor Intel. That's a problem, if you care, as I do, as I think you do, as a lot of us do, about markets-based principles. And you've emphasized that this is a crucial part of this. We can't just leave that to the side.

So take us through the example of MP Minerals, what the Defense Department did there, what you see as the virtues of it, but then what you also see as the risks.

ARNAB: For a bit of context, MP Materials is a company that was founded and bought a mine called the Mountain Pass Mine in California.

CARDIFF: We started the conversation talking about that—

ARNAB: Yeah, exactly. And this is a mine that's gone through that cycle. It closed in 2002, reopened in 2010, and then closed again in 2015, and then reopened in 2017.

And you could tie this basically to Chinese policy, essentially. Over the course of that, I think a company invested $2 billion and then sold for $20 million or something like that. But the MP Materials deal is quite a holistic deal that the Defense Department signed.

MP is committing to — they've got this mine, they'll continue producing the oxides, the raw ore necessary, to go into rare earth magnets.

They will invest in a processing and separation facility to get to that refined output. And then they'll also commit to building and finishing this thing called the 10X Facility, which produces rare earth magnets, so the finished product. So that's what they've committed to.

The Defense Department is providing them with a $150 million loan coming out of the Office of Strategic Capital at DOD. They’re getting an equity investment — part of that is a direct equity purchase. There's some warrants as well. That would make DOD essentially the 15% — I think, the largest stakeholder — in MP Materials.

They're getting a guaranteed price floor for that oxide that I mentioned. So that will be purchased for a price of $110 per kg, regardless of what that market price is. Indexed to Chinese market infrastructure, to be clear. A Chinese benchmark contract.

They're also getting a guaranteed profit EBITDA of $140 million a year, I believe. And then they're getting a guaranteed purchase agreement for 10,000 tons of those rare earth magnets that I mentioned. So this is like soup to nuts, the defense—

CARDIFF: Looks like there's financing on the financing side, but then also on the "we will buy this stuff" side.

ARNAB: Exactly. And so this incredibly robust, holistic investment across the value chain, essentially, is establishing MP Materials as our vertically integrated national champion for rare earth magnets. The things that I like about this are that they're acknowledging a lot of the problems that I talked about, right? The price floor is a recognition that we need a tool like that. I think I could quibble with the design of it, but that you need something like that — some kind of insurance for them to continue producing. The equity investment is some patient capital, at least for them to start investing in the processing facility, learn how to do processing better. The guaranteed purchases — again, all of these are fulfilling a purpose.

And I'm a lawyer by training. I like the robust use of the authorities that they've relied on here. I think that it's good that they're taking that and treating it in a pretty serious way.

My concern is that there isn't a lot of transparency on why MP was given — across both in the processing space and the rare earth magnet manufacturing space — why they were given this support, right? Like they've never produced a commercial rare earth magnet. They didn't have the pressing capability. They were shipping all of that to China.

There are competitors in the space, right? There are other companies that are experimenting with really innovative methods of processing where the only byproduct is water. So they're environmentally much better. They use, I think, 5% of the energy of traditional electrowinning process, which is how you separate rare earths. These are innovative companies, and you could imagine a world where they're losing investment because another company has been crowned the national champion, right?

And so I really worry about the lack of — in a broader kind of political context — there's a lot of questions about process and procedure and how much do you wanna layer on. But not all process is bad. Process can give credibility to the markets. And the thing I really worry about here is that they've just bypassed that competitive process and crowned this company without contest, essentially.

I mentioned Operation Warp Speed — there were a set of metrics that the companies producing vaccines, if they met them, they would get support. That was basically it, right? If their vaccine was 70%, 60% effective, whatever it was, those companies would then get support if they could demonstrate—

CARDIFF: What's the phrase? It was "by right"? Like if you pass the test, you qualify.

ARNAB: Exactly. And so we had several competitors get it, right? We had multiple mRNA vaccines, we had the J&J single dose. We got innovation out of that process as well, and competition. And so I worry about a structure where we're not at least supporting some competition within the ecosystem. Because that's what makes our country—

CARDIFF: Just to be clear, no other company got this kind of deal, right? It's just MP Materials that was singled out for it. It wasn't, like you said, a transparent process that says, "Okay, here's what you, companies of the US, have to do to qualify, and if you meet all these standards, you can get this help." It was just the Defense Department choosing MP Materials and cleverly using the tools now at its disposal, but not making that offer to anybody else. I worry about that too. That's unfair. That strikes me as unfair and against markets-based principles.

ARNAB: Yeah. And I think this was literally just announced, but another company called Vulcan Materials — all I saw in the details, which was literally just announced — is that they are committing to produce 10,000 tons of rare earth magnets as well. So they're getting some support from DOD, it seems. So there is at least one other company, but again, I don't know the details of that.

I think a broader concern I have with this deal-by-deal structure as well is that it can engineer you in a way where you end up relying quite a bit on these investments you've made and are committed to make over 10 years, when — what if there is a disruptor, right? How are we gonna ensure that it—

CARDIFF: A new competitor, somebody who's really good at this and better than the company that the US government has chosen to support.

ARNAB: That equity stake — there's been some reporting on this — that part of the reason they're doing these equity stakes is ultimately to potentially capitalize a sovereign wealth fund of some kind. The presence of a sovereign wealth fund is not something that I think is bad. I think this is something that Congress should really consider creating.

But if you have a world where these equity stakes are backing that sovereign wealth fund, right? If that competitor emerges, it is not in the interest of the federal government of that sovereign wealth fund to support that competitor that could be better and lower cost, because then the value of that capital will go down — that we're holding the equity stake in. And so I think that creates a lot of questions for me about the structure of this.

Another real question with these equity investments is: what is the exit strategy? If it is not that sovereign wealth fund, when are we selling this so that we don't run into a situation where we're worried about a competitor that could be better and could be a better company for the US government to get behind?

CARDIFF: I'm also worried about all those things too because it seems to go against sound principles of market design, and all throughout our conversation, the thing that's come to mind — and that had come to mind as I read your work — was whether or not we're dealing here with market design with industrial policy characteristics or industrial policy with market design characteristics. I wasn't really sure which to emphasize more, which was being emphasized more. What do you think?

ARNAB: It's a good question. I think right now it looks more like industrial policy with market design characteristics. I really think one reason why we have written a lot about this market infrastructure challenge — and it's important to understand, the companies that build that. Exchanges, traders like Glencore, Trafigura — these are companies that don't always get the best press, rightfully so, because sometimes they do some really bad things. But they fulfill a really important role in the market. And I think those companies are good at doing that.

And it doesn't mean that you don't need government support, but I really think that this can be designed in a way whereby those private entities that have played a pretty good and important and necessary role in developing these markets can be the ones to do it — that they can take this capital and turn it into more robust, resilient markets.

I think that there's a lot of value in taking that private-led approach because ultimately you want something that can sustain beyond government intervention, right? I don't think our goal should necessarily be perpetuity government supporting this. I think we should be thinking about an exit strategy — the market structure is broken, let's do a time-bound intervention, and then hopefully we can get on the other side in something that's more sustainable.

CARDIFF: Design the market. Establish the market. Get out. And let the market work.

ARNAB: Yeah. (CHUCKLES)

CARDIFF: Last question. What is something about this topic that you think people either misunderstand or very often fail to appreciate that you would wanna leave them with?

ARNAB: I think picking up off my last point about the companies and the infrastructure is that financialization is often used as a bad word, right? You're

bringing all these speculators in, and this is how prices spike and prices go down, and it's the speculators doing it. And it's not that that is never the case, but it is important to understand also that financialization can be a volatility-dampening mechanism itself.

And yes, it doesn't mean that there will be no speculation or no volatility, but if you take, for example, the oil market, where the WTI contract — the West Texas Intermediate contract — which is one of the most traded financial instruments in the world, that has physical infrastructure tied to it. There is a storage facility — that contract physically delivers to Cushing, Oklahoma, where there is storage where you can put that oil if you want it to sit.

That is a volatility dampener, right? If it is not the right time, you can go store it. When those storage facilities are empty, people will start purchasing and storing it there. And that can build a bit of a cushion for the next time when you want to release product into the oil. This is all financialization in some word, but it plays a role in reducing volatility in the economy, in the oil market. And I think that's a really important function.

CARDIFF: Great answer.

Arnab Datta, congratulations. You are now *The New Bazaar*'s markets design guy.

ARNAB: (CHUCKLES) Wow.

CARDIFF: So we'll be keeping an eye on this and hopefully have you back sometime next year as we get more updates on how these plans to develop strategic resilience are coming along or not coming along.

Either way.

ARNAB: Let's stay hopeful. Yeah, for sure.

CARDIFF: Thanks so much for being on *The New Bazaar*.

ARNAB: Thanks, man.