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The Saudi Aramco IPO and the future of global oil markets  
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PARTICIPANTS:

DAVID DOLLAR

Senior Fellow, Foreign Policy and Global Economy  
and Development Programs, John L. Thornton China Center  
The Brookings Institution

SAMANTHA GROSS

Fellow, Foreign Policy and the Energy Security and Climate Initiative  
The Brookings Institution

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DOLLAR: Hi, I'm David Dollar, host of the Brookings Trade Podcast [Dollar & Sense](#). Today my guest is Samantha Gross, a fellow in the Energy, Security, and Climate Initiative here at Brookings. We're going to start by talking about the Saudi Aramco IPO, but the move onto larger issues of the landscape of global oil trade. So welcome to the show, Samantha.

GROSS: Thank you for having me.

DOLLAR: So recently the government of Saudi Arabia sold a small part of its state-owned oil company, Saudi Aramco, as part of an initial public offering. And that confirmed that it's the most valuable company in the world, worth about \$1.7 trillion. But it was also kind of a disappointment.

So, what was the objective and why the disappointment?

GROSS: Sure. So Crown Prince Mohammed bin Salman announced his intention to have an IPO for Aramco back in January of 2016. And his motivation was to raise money that he would then turn around and invest to diversify the Saudi economy from its overwhelming dependence on oil revenues. And this shift is a particularly important one for Saudi Arabia. We think of Saudi Arabia as being the king of oil markets, but actually, when you look at their reserves and their sovereign wealth on a per capita basis, they're a lot lower than their neighbors. And so Saudi Arabia really needs this. They also have a very large youth bulge; about 40 percent of their population is under 25. And so they need this diversification.

So MBS, as Mohammed bin Salman is often known, he planned to sell 5 percent of the company to raise \$100 billion. Instead, last month the IPO was only for a 1.5 percent of the company and he raised \$26 billion, which was pretty disappointing to him. What happened is that western investors really balked at that \$2 trillion valuation that he was really pushing for. And so what they did was a smaller offering to investors in the region who likely had a higher willingness to pay for Aramco shares.

DOLLAR: Right. And so this is not listed on the major international stock markets, right?

GROSS: No, it's only on the Tadawul, the local Saudi exchange.

DOLLAR: Right. Now, diversifying the economy makes sense. Any economy that's completely dependent on a natural resource -- it's going to be exhausted at some point -- faces this challenge. You mentioned the youth bulge. You know, what specific policies would help them diversify?

GROSS: Well, they've put together a grand plan called Vision 2030 to totally remake the Saudi economy. The folks from McKinsey came in and helped them put this together. And the plan is really focused on increasing the role of the private sector, encouraging innovation, and also providing better services, more entertainment opportunities, more to try to keep the best of its population within the country. But these shifts are really difficult, and some recent events really haven't helped.

The Saudi government is still really active in their economy and they often come in and take the best opportunities and crowd out additional private investment. And then also the government really hasn't helped its case. For instance, they in 2017 turned the Ritz Carlton in Riyadh, the capital, into the world's most expensive prison by rounding up a lot of wealthy Saudis into what really looked like a shakedown for funds. There wasn't really any due process. Also, the murder of journalist Jamal Khashoggi in late 2018 was also not helpful in making Saudi Arabia look like a good and safe place for outside investors.

Ultimately, what Saudi Arabia needs to do is they need to change their relationship of the government with its citizens. The way it's set up right now is the government is primarily focused on distributing oil revenues to citizens through things like energy subsidies and cushy high paying government jobs, whereas they need to move to something where the government is more focused on encouraging and enabling private investment and other kinds of growth to flourish. And this is a really big change and it's going to be hard for them to do.

DOLLAR: Right. So just listening to you, Samantha, some of those things you mentioned like distributing oil subsidies to the population -- basically creating kind of sinecure jobs. All of that is clearly not sustainable. So as the oil runs out, that has to run out. So the challenge for a resource rich country

is to transform that oil in the ground into much larger capabilities.

GROSS: Yeah. And the IPO was basically a way of selling forward some of that oil and bringing that money back to invest.

DOLLAR: In my long experience in the World Bank I worked with some resource rich countries like Mongolia and I found often the tension was you need to both invest in people and you also need to develop infrastructure and other productive parts of the economy. And local officials tend to favor the latter. You educate people, you give them good skills, well they have opportunities to go all over the world, which is basically a good thing. On the other hand, you know, you build local infrastructure and you try to bring in production to where you're at.

So I do think personally that investing in people is really one of the most important aspects of that diversification.

GROSS: Yeah, that is definitely true. The Saudi youth population actually is pretty well educated, but the challenge is when oil so dominates their economy, it just doesn't employ a lot of people compared to the revenue it brings in. And so they have a real employment challenge. That's part of the reason why they've had so many Saudis working in the public sector. But as that becomes unsustainable, these people need jobs and opportunities and sort of meaningful careers.

DOLLAR: So let's move on and talk a little bit more about the larger oil market, the forces that are influencing the price of oil. It tends to be one of the most volatile commodity prices. It's one of the most important traded commodities, so it's a great thing to be discussing on our podcast.

What we've seen over the last decade is the price of oil hit a high of \$125 per barrel back in 2012, and then the price collapsed by about 80 percent within a few years to as low as \$30. And now it's up around \$70. So clearly a lot of volatility. What are some of the factors? Let's break it down between long-term demand and then supply. Let's talk about demand first.

GROSS: Sure. Well, over the long, long-term, oil demand is likely to plateau and then sort of

slowly decline as the world deals with the problem of climate change. However, I am not one to believe that it's going to decline quickly. There's a lot of uses for oil that are just really difficult to replace. Heavy transportation is one, but then there's also areas where oil is used a raw material rather than a fuel. And so because you're not combusting the oil, we're not as worried about that for climate change. So things like plastics and industrial chemicals come to mind there.

And so we're not going to see oil demand go to zero anytime soon, but as demand declines, the most expensive producers are likely to get pushed out of the market. And this is great -- sounds like good news for the Saudis anyway because they're among the lowest cost producers in the world, certainly single digit dollars per barrel and you were just talking about prices closer to \$70 a barrel. But the problem is you don't need a steep decline to see a big change in prices. I mean that's what we saw in the past decade. We saw supply increase, demand increased somewhat, and it doesn't -- only has to be a little out of balance to see a really big swing in prices. And so you don't need much of a decline in demand to really make a difference in prices, which could really hurt the Saudis.

DOLLAR: Right. And so in addition to that long-term trend related to climate change -- and I understand your skepticism about how strong that's going to be, but hopefully we're going to leave a lot of this oil in the ground.

GROSS: Certainly we're going to leave some oil in the ground, no question.

DOLLAR: Right. But in addition to that, as you say, just small changes in the global growth rate makes a big difference. In the last few years global growth has been okay but not great. I mean it slowed down compared to the previous years and nobody knows for sure what's going to happen. There's some exuberance -- I don't know if I want to call it rational or irrational -- but there's a certain amount of exuberance at the moment. Maybe the world economy is going to start accelerating and it just takes a little bit to then really increase the demand for oil. But we may be limping along for years to come and hard to really predict that demand side.

GROSS: Yeah. And oil markets lately have been super skeptical of economic growth, I think primarily because of the U.S.-China trade dispute. It's interesting to watch oil prices in terms of announcements that have come out of potential resolutions or difficulties in U.S.-China trade talks. That's really, really been a factor influencing oil markets lately.

DOLLAR: So let's turn to the supply side. So on the supply side, we've had lots of different unexpected shocks. Let's face it, a lot of oil is sitting in relatively unstable parts of the globe. So there are all different political, economic, military shocks that can influence.

Let's take Iran as one example. Iran in the relationship with Saudi Arabia, because as I understand it, under Iranian influence there was a drone attack on Saudi facilities earlier last year and that had pretty significant effect on the price of oil, supply of oil. Did that affect the IPO?

GROSS: Yeah, it did. Going back for a second, the attack on the Abqaiq-Khuras facilities was really serious. It temporarily took about half of Saudi oil production off the market. And this really sounds catastrophic, but an important thing to remember is that even though these attacks were serious, they were still pretty measured, compared to what they could have been. It was really sort of a demonstration of capability to produce, you know, pinpoint damage in these facilities. But the Saudis pushed really hard to repair the facilities quickly, spare capacity was available to take up some of the slack, and so that production came back pretty quickly. So oil prices didn't respond quite as strongly as they otherwise could have.

But that attack was really serious. And I think it certainly impacted the IPO. I mean you think about a western point of view, we really think of Saudis as being, you know, the central bank of oil. We ask for it and they produce it. And this really showed that Aramco production is vulnerable to attack.

The Abqaiq facility in particular has an enormous oil processing facility the majority of Saudi oil goes through. And this has been an obvious target for a really long time and one might have thought that it would have been better protected.

DOLLAR: And now just in the last few days we've had this U.S. drone attack killing an Iranian General who has been involved in terrorist activities around the Middle East. And that seems to have an immediate effect on the oil market. Even though there's no obvious immediate effect on oil production, it definitely seemed to have an effect on price.

GROSS: Oh, absolutely. I think oil markets are very concerned about how the Iranians will respond to this. They've demonstrated ability to attack tanker ships in the Strait of Hormuz, attack Saudi oil facilities, Saudi pipelines, and they certainly have even more impetus to do this than they had before. And so I think markets are really concerned about how the Iranians will strike back, because they certainly will.

DOLLAR: And let's talk a little bit about Iran's role in the oil market, aside from these geostrategic issues. They had been a really major producer. After that UN agreement was in place they were pumping 2.5 million barrels per day. I think that's down very significantly, about 75 percent I've read. So a little bit surprised that hasn't had more affect on oil prices.

GROSS: Well, removing Iranian oil production from the market would have had a greater impact if it hadn't been for other factors pushing the price down. And the most important one is rapidly growing United States oil production.

In 2018 the U.S. became the world's largest oil producer and U.S. oil production over the last decade really increased rapidly. In fact, that rapid growth in U.S. oil production probably allowed the United States some political room to impose those sanctions in the first place.

And then also expectations about economic growth. Concerns about trade wars and such have really been keeping a damper on oil prices recently.

I have to say that I think oil markets have really been underestimating the political risk that's out there right now. Oil prices jumped overnight on U.S. strike on General Soleimani in Iran. And this could

certainly get a lot worse before it gets better.

DOLLAR: You mentioned the shale oil/shale gas revolution in the U.S., which has been a big factor. Can that continue? I mean does the U.S. fundamentally have reserves that match the kind of scale we see from Saudi Arabia or Russia or Iran?

GROSS: The U.S. doesn't have the kind of reserves that those countries do. However, forecasts generally call for increasing production in the U.S., but much slower than we've seen over the past few years. And the main reason for that is that the kind of production that happens here in the United States, you drill a well, you get good production at the beginning, and then it declines quickly. And so you have to keep on drilling in order to keep production up. In years past, producers have run up a ton of debt by not just drilling to keep up, but rapidly increasing production. And now investors are wanting to turn that down a little bit. They want to see those returns used to pay down debt and to provide their investors with larger returns rather than continuing to plow back all the profits into increasing production.

So I think we'll see U.S. production maintained, perhaps go up a little bit, but not the crazy growth we've seen over the past few years.

DOLLAR: And what about our neighbor, Mexico? There was a lot of enthusiasm when the new president came in. How is that panning out?

GROSS: You know, I'm frankly bummed at what the Mexican president has done over his first year in office. The previous president really focused on bringing in outside investment into Mexico's oil sector, something that he had to amend the Mexican constitution to do. But Pemex, the Mexican oil company, didn't have enough money and didn't have the expertise to develop some of the resources that Mexico has. And so in my opinion anyway, this was a really good move, to bring in outside investment to increase production. President López Obrador on the other hand has pulled back the bid rounds for oil. He says he's going to put at least a three year moratorium on allowing new contracts to



produce oil because he wants to see results from those first contracts.

Well, it takes five years at least to see results from those contracts -- they have to go out and explore and develop. And so he's going to be waiting a while if he wants to see progress from those first contracts before he does anything new. And I really think he's holding Mexico back in terms of what they could be doing if they had outside investment.

DOLLAR: So do you worry at all about what would happen if all these supply bottlenecks got resolved at the same time or around the same time? So you think about Iran down 75-80 percent from its peak, if you actually had some kind of advance and UN agreement with Iran, basically accord between the U.S. and Iran, you'd have a vast amount of oil. Mexico could get its act together. Venezuela's a basket case with enormous reserves. So what if everybody gets their act together at the same time, what happens then?

GROSS: Prices plunge. You see the kind of price drop that we saw back in 2012 that you described at the beginning of our talk. That happened when U.S. production increased rapidly and OPEC didn't respond. They decided not to cut back on their production. You saw a shock from the supply side and prices went through the floor. If that kind of thing happened again, that's what would happen.

DOLLAR: Would that be a problem for the climate change agenda?

GROSS: It would be because, I mean you think back to a decade 15 years ago, a lot of people were really worried about peak oil. And when they said peak oil they meant peak oil supply, that we were actually going to run out of oil in the ground. And the past decade has proven that to not be the case. And I don't think engineers really believed that anyway.

Now when we talk about peak oil, we talk about peak oil demand. But the problem is cheap oil encourages demand, which is exactly what you don't want to see in terms of climate change. Plus it makes oil more competitive against other fuels, which makes it more difficult to switch.

DOLLAR: Right. From a, you know, purely economic policy point of view, you know, what we

want to do is we want to have a high price of oil for consumers, both people driving their cars, but all the companies that use airlines, et cetera. You want to have a high price that reflects this externality that it's heating up the climate, the global climate and it's going to create kind of disastrous problems we're seeing in Australia right now, for example. You'd like to target that very high price and let taxes adjust. So if the world price drops very dramatically, that's a windfall gain for all the net importers, but we don't have to pass it onto consumers in the form of a lower price for gasoline, we could have a high price for gasoline, collect a lot of tax, use that for all kinds of other social purposes.

GROSS: That would be fantastic, but I think the challenge is -- and I shouldn't be telling you my economist friend this -- but countries love the sugar rush that you get from low oil prices, and I think it's really hard for them to pass taxes at that time because they're enjoying a little economic boost that comes -- at least for net importers -- that comes from low oil prices.

DOLLAR: So along the way we've mentioned quite a few different countries that are obviously involved in this global oil trade, and aside from ones we've mentioned, I'm aware that there are new producers coming on line in Africa. You know, there are several African countries that are very enthusiastic about their opportunities. They are medium-sized players, like Vietnam; Brazil is becoming a major producer -- I'm not sure if it's exporting, but it's becoming a major producer of oil.

So I look around at this landscape and I wonder, you know, who here are really the low cost producers?

GROSS: Yeah, I'll add Guyana to your South American story. Exxon Mobil has had some amazing discoveries there and it seems like every time they drill a well they find something new. So we're definitely seeing more oil from South America as well.

As far as lowest cost producers, national oil companies produce more than half of the world's oil and they're not quite as forthcoming with their production costs as the international traded oil companies that we're used to hearing about. So there's a little guesswork involved around the edges,

but by and large countries in the Middle East and North Africa have the world's lowest production costs, countries including Saudi Arabia, Kuwait, Iran and Iraq, Algeria, and Libya. Those are your lowest cost producers by and large.

So if you see an extreme decline in oil demand, these are going to be the last countries standing. They have the lowest production costs and they can out compete the others.

There's sort of a saying around the oil industry that the very last barrel of oil produced ever will be produced in Saudi Arabia because it's so cheap. And I generally believe it. In other areas, the costs really depend on the conditions; more extreme conditions mean higher costs. Like very deep water, locations far from services, locations with extreme weather like the Arctic.

DOLLAR: Are we really looking for oil in the Arctic? I mean it just seems like it's going to be so expensive that that's just not going to be part of the equation.

GROSS: For the most part, no. The price decline that we saw in 2015 by and large pushed out a lot of thoughts about producing in the Arctic. But I mean a lot of other projects, projects in extreme deep water, for instance, are still in the money at \$60-70 a barrel of oil, which we're seeing right now.

DOLLAR: What about that U.S. shale oil production? Is there kind of a price at which that becomes unproductive?

GROSS: It varies play for play and well for well, but I mean at today's oil prices that oil is plenty profitable.

DOLLAR: So to come full circle, you mentioned that a lot of global oil production is from state-owned companies, like Aramco, which is where we started, and that often they're not that transparent about cost financing. Even with the disappointment we discussed about the Saudi Aramco IPO, did that result in more transparent information, you know, coming out to the market? Because economists in general, we favor quick dispersion of information to the market in order to get the most efficient decisions. So do we know more about Saudi costs and production because of the IPO?

GROSS: We do. They brought in some independent auditors to look at their production and put some information out there.

In terms of the IPO, this idea of transparency was a real challenge for them. Saudi Aramco had had been a very secretive company up until then. And in order to pull off the IPO they had to put out some things they never had before, including some cost and production numbers. And so we did get more transparency.

But I think how transparent they were going to be was a real issue for them. They wanted to be more transparent to make the company more valuable, but on the other hand they were showing some of the family secrets that they may not necessarily have wanted to do.

DOLLAR: Right. That's the tradeoff that these authoritarian governments face, is they want to get some of the efficiency associated with the market, they'd like to bring in foreign investors, but they tend to be very closed about all kinds of secretive information and you can't really have both.

GROSS: Exactly.

DOLLAR: So I'm David Dollar and I've been talking to Samantha gross about the Saudi Aramco IPO, the larger global oil market, which remains one of the most important parts of international trade. Thank you very much for joining us, Samantha.

GROSS: Thanks for having me, it was fun.

DOLLAR: Thank you all for listening. We'll be releasing new episodes of Dollar & Sense every other week. So if you haven't already, make sure to subscribe on Apple Podcasts, or wherever else you get your podcasts, and stay tuned.

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episode suggestions to [BCP@Brookings.edu](mailto:BCP@Brookings.edu).

And until next time, I'm David Dollar and this has been Dollar & Sense.