

Barefoot Innovation Podcast with Chris Giancarlo, Corporate & Financial Services, Willkie Farr & Gallagher LLP

***Note that transcripts may sometimes contain errors and that transcript timing notations do not match the posted podcast**

Jo Ann Barefoot: I am thrilled to say that we have back again on the show. Chris Giancarlo, who was previously the chair of the Commodity Futures Trading Commission in the United States and has gone on to do fascinating work, particularly on digital currency and CBDC. Chris, welcome back to the show. We will link to the previous episodes in the show notes, but I'm thrilled to have you back with us again today.

Chris Giancarlo: Jo Ann, it's so good to be back. We've done this probably several times over the course of almost now a decade. I think when I was a young commissioner cub at the CFTC, you interviewed me. And in the crypto world, there's the phrase an OG, an original gangster. I mean, your status as an OG in the intersection of technology and regulation goes even before crypto. And so it's really great to be back with you and looking forward to discussing where we are today. As we did in the past, we discussed different stages of all this innovation and it's great to team up once again.

Jo Ann Barefoot: Well, you are so kind to say that, I appreciate it so much and I'm really looking forward to the conversation. So to get us started, I think many of our listeners know very well who you are, but recap for us your current various titles because I know you're involved in some different things, and then quickly catch us up on your background and then we'll start talking about where we are today.

Chris Giancarlo: Great. So, Jo Ann, my last state in government, I served as chairman of the CFTC and I was commissioner there two and a half years before becoming chair. I completed a full five-year term of service in the summer of 2019 and then I stepped down, and since that time I've really done two primary things. I became senior counsel at the international law firm of Willkie Farr & Gallagher, and then also I co-founded and now serve as executive chairman of the Digital Dollar Project, which is something I'm looking forward to discussing with your audience today. My professional training is as a lawyer and I practiced law for 16 years in New York and London from 1984 until the year 2000. And 2000, I teamed up with a group of entrepreneurs to take a small Wall Street partnership and turned it into GFI group, after raising private equity, eventually going public and emerging as one of the largest global networks for trading types of products that didn't trade on exchange but traded in over-the-counter markets.

And notably, we were one of the leaders in various types of swaps transactions, notably credit default swaps. We grew to be one of the largest players in the market, very successful public listing. And by 2008 we really were the marketplace where most of the world's credit default swaps traded. Now, we

were not a trading house, we were an exchange for things that didn't trade on licensed exchanges. And when the drafters of Dodd-Frank took up regulation of the swaps market, I found myself testifying repeatedly in front of Congress as to how this marketplace worked. I also gave a lot of thought to people blamed in some circles the collapse of the market in 2008 on print default swaps. It really wasn't the swaps, but it wasn't the fear that they would fail, it was the fear that they would work in providing insurance against the failure of some of the Wall Street banks.

At the time of Lehman's demise, it was estimated that there were \$400 billion in swaps written against the failure of Lehman Brothers. And they basically extrapolated and said, "Well, Lehman Brothers failure would trigger 400 billion in payments than a failure of Morgan Stanley might trigger 800 billion and a failure of JP Morgan might figure over 1 trillion." And that was the basis for the TARP program to flood the bank's balance sheets with dollars to prevent a run on the bank in the same way that a fire brigade might wet down every house in a neighborhood to prevent fire from spreading. But those calculations were done by what they call gross notional amount, the total amount of swaps written. But as a practitioner in the marketplace, I knew that most of the banks had hedged their position. And one of the things that I looked to work on when I eventually made it into government, along with Professor Bruce Tuckman of NYU, eventually became the chief economist of the CFTC, was what was the net position?

Well, we now know that a failure of Lehman Brothers would not have triggered a gross amount of 400 billion. It would've triggered less than 9 billion net exposure. Well, if we knew in 2008 the failure of Lehman Brothers would've only triggered 9 billion, our policy choices could have been vastly different than what they were. First of all, we might not have had a crisis because the clarity would've provided a very sobering impact to the marketplace. But more than that, a policy choice could have been to let Lehman fail and it wouldn't have played out across Wall Street. Another policy choice might've been to bail them out. In fact, private investors may have been perfectly willing to invest 9 billion to save Lehman Brothers, but we didn't have those policy choices because we didn't have the clarity into all of these cross hedged instruments across Wall Street. And here's my point, if we had a blockchain and all of those swaps were recorded on a blockchain, we would've known instantly the true exposure of our major financial institutions to this type of crisis, but we didn't have it.

But I became fascinated by blockchain technology with that memory seared in my mind. And so when the Obama administration invited me to join the CFTC in 2013, I eventually was sworn in 2014, I focused very intensely on distributed ledger technology. And in 2015 as a minority commissioner, I gave a speech at the Cato Institute calling for a do no harm government regulatory approach to blockchain technology. And in 2017, upon becoming chairman of the agency, I immediately created something called LabCFTC and charged it with understanding everything we could about distributed ledger. And more than that, the whole concept of using the internet as the basis for recording value of

who has value and who's transferring value to whom as opposed to what we've done for the last 400 years in human society and record value on bank balance sheets, I became fascinated by this technology.

And when we were approached again in 2017 by some of the largest US derivative exchanges about launching derivatives on Bitcoin and ultimately Ethereum, despite a lot of pushback from some regulators here and fellow regulators here and those abroad and complaints that we were legitimizing Bitcoin were we to license and allow this new market to go into being, we went ahead anyway and green-lighted the launch of Bitcoin futures, and I'm proud to say that five years later, that market, it's functioning well, it's liquid, it's deep, it's transparent, it's orderly, and it's well-regulated. And I think what we did five years ago is proof that regulators, including US regulators, can engage successfully with crypto and do so in a way that garners the confidence and trust of the public. Anyway, my term came to an end in 2019. I recounted my experience in government in my book I published last year *CryptoDad: The Fight for the Future of Money*.

And one of the things my entire experience taught me was that you can't stop this innovation. The internet is doing to finance, to banking, and to money itself what it's already done to information gathering, and social networking, and entertainment, and travel, and leisure, and shopping, and meetings like this where we're speaking to each other over a Zoom connection and it's going to do it the banking and finance and money. And it's imperative that just as the United States led the first wave of the internet and made sure that the internet, as we know it, was one that is safe for free people and democratic societies and as an open architecture. The United States really needs to be leading this next wave of the internet, this internet of value and making sure that American values, democratic values, constitutional principles are brought to bear. And so I'll end my opening remarks with this. In 2020, I founded the Digital Dollar Foundation and then we launched the Digital Dollar Project.

And our purpose is very simple. It is to address the question of how do we future-proof the dollar, how do we preserve its reserve currency status for future generations, and how do we do that in a way that's consistent with the values of a free society, including the right to privacy, including economic privacy in a world in which value is increasingly moving onto both decentralized systems of value like Bitcoin and centralized systems of value, some run by big tech companies and others run by central governments. And that's the question we ask at the Digital Dollar Project. And as we go in this conversation, I'll tell you more about what we've done over the last three years, but it's a very exciting endeavor and one that I'm very pleased to be spending a lot of my public and private time on these days.

Jo Ann Barefoot:

Wonderful. You touched on quite a few things I do want to follow up within our conversation. One is I'll mention that we will link also to your book *CryptoDad*, which I had the pleasure of reading and recommend all the time. It's a great readable overview particularly of cryptocurrency, and so I know everyone will

enjoy seeing it. And you also touched, and I hope we'll have time to loop back on the issue of the difficulty of regulators having enough information to be able to understand what is going on in our increasingly complex financial markets. And I think this is a critical topic that maybe we can save some time for at the end of our conversation because you were a leader and really trying to figure out how do we get the regulatory bodies themselves equipped with the technology they need to be able to get their job done today.

Let's go next though to an overview of where we are on Central Bank Digital Currency, CBDC. I think the first time you and I talked, you were at the CFTC and we were talking about regulatory innovation and then we've done I think several shows on the prospect of CBDC really at a very early stage. And then looking now as these discussions are maturing, you and I were just at a conference in Europe, I think you were there in person and I was there virtually this time, but where you shared a recent talk that you had done on what you think this outlook is like. Paint the landscape for us on how the CBDC issue is progressing worldwide, central banks worldwide. Talk maybe a little bit about retail versus wholesale CBDC and where you think we are and where we're going.

Chris Giancarlo:

Absolutely. I'll start with the punchline. The punchline is that we are all going to be interacting with both sovereign and non-sovereign digital currencies in the decades to come. Whether the United States launches a digital dollar or not, it's almost irrelevant because sovereign and non-sovereign digital currencies are going to proliferate around the globe. So what do I mean by that? Well, right now, 130 countries are looking at what's called Central Bank Digital Currency or CBDC, which is basically a form of digital currency that enjoys the full faith and credit of a sovereign of a government. Of that 130 that are looking at it, 50 countries are already in advanced stages of development, including 19 of the G20. China has launched its central bank digital currency, which it calls its e-CNY. CNY is the global symbol for the RMB, the Chinese currency. e-CNY is its electronic version.

It's placed that in over 260 million Chinese wallets and that's a two-year-old figure. The more accurate figure, maybe much greater than that. And to give you a sense of its determination to further this development, just this week, a few days before our conversation we're having right now, it was announced that China's done the first global oil purchase using its central bank digital currency. But China's not alone, Europe has also announced in the last few days that it's now gone beyond the trial stage and it's now going into a two-year implementation stage for a digital euro. The British have said they are examining a digital pound and may consider launching one within the decade. A number of countries have already launched theirs, including the Bahamas, including Cambodia. So Central Bank Digital Currency is coming, but so is non-sovereign, so is private sector operated digital currency in the form of stable coins.

Stable coins are obligations not of a sovereign but of a corporation, but are backed by money of the sovereign. You might think about a prepaid store card or an American Express traveler's check. They are coming as well. The amount of

volume done by stablecoin transactions has been growing remarkably so, and a number of major international champions are backed by dollars. I include companies like Tether, but here on US Shores, Circle, and of course I'm sure your listeners know that PayPal announced recently a stablecoin. So this debate that seems to be popular in Washington to CBDC versus stablecoins is rather a stale debate, it's an irrelevant debate because the future will be both stablecoins and Central Bank Digital Currencies and to a well-known governor in Florida that seeks to ban CBDCs from Florida when the Miami Lamborghini dealership has got to pay for their inventory using digital euros, I don't know whether they're going to have to shut down because of this ban on CBDC. I'm being facetious, of course.

The point I'm trying to make is we live in a global world as big as our content is we can't shield ourselves from what's happening around the globe. Moreover that, we shouldn't shield ourselves. In fact, we shouldn't hide from this, we should own this. And that's my disappointment with the current debate rather than shielding ourselves in the same way that certain sectors of American society in the 1970s said, "Oh, nuclear power is too dangerous, let's not do it here." All that led to is allowing other countries to perfect nuclear power and drive their economy within create much greener economies than we've created here. I think we should be admitting the challenges of CBDC and I'll come to those in a second and determine ourselves to address them. And so what are those dangers? Well, there's no question that China's already now established a benchmark for a type of CBDC that suits their values, one that has surveillance built into it, one that has censorship capability.

With the digital yuan, if you criticize the regime, your money will no longer be effective to buy a railroad ticket out of your village. I had the pleasure of serving on a Hoover Institute committee that did a one-year study of the digital yuan and prepared a report for the Biden administration. And it's quite clear that China's digital currency, as technologically sophisticated as it is and it is quite sophisticated, will provide the central bank with a degree of surveillance and censorship capability. Now let's not make the mistake of believing that those features do not have their attractions to certain regimes around the world. In many close societies, including client states of China's belt and road initiative, that type of technology will be very attractive. I can imagine within 10 years you might see closed societies even here in the western hemisphere adopting white label versions of the digital yuan.

You can imagine a digital bolivar, which is a white label version of the digital yuan that allows that regime to surveil its citizens. So really the question in my mind is for those of us in free societies, we the people, what is our response to that? Is it to put our head in the sand or, as I believe it should be, to counter that type of surveillance digital currency with a freedom-based digital currency? A digital currency that is cannot be surveilled, that a censorship resistant and is operationally so that we don't have to have a government or a stablecoin operator promise us that they're not surveilling us, but we can operationally see for ourselves that we're not being surveilled. Now again, this notion that

somehow if we leave the private sector to do it we won't be surveilled is really belied by our own historical evidence of the last few years where we've seen how social media companies have been only too happy to bend to government demands for censorship of certain conversations, whether it be the effectiveness of mask mandates or school closings or the origin of COVID.

And I'm not taking a view on any of those issues, but we do know from court cases, one of which is now going to the Supreme Court that the government has been found to be heavily censoring certain activities and they can do so because they can make the argument that those private sector companies are not subject to the constitution in the way the government is. And so you can imagine a future where licensed stablecoin operators here in the United States run into regulators that say, "Hey, if you allow people," let's say, "To buy ammunition or to support Planned Parenthood depending on whether you have a right wing or a left wing government, we're going to pull your license." So we do need to think about what is the free society response to surveillance and not simply take a very, I think, shallow analysis that say, "Well, let's just leave it to the private sector and assume the private sector is going to get this right."

I do think the right answer has got to be that any system of value that touches the dollar, whether it's a stablecoin based on the dollar or ultimately a US digital dollar must abide the constitution, it must pass constitutional muster. In a way, Jo Ann, that even our, quite frankly, existing analog system has lost touch with the constitutional principles. We know that huge hoards of information are turned over to government surveillance in our non digitally network financial system by our banks and financial service companies. So I actually think the coming of digital money, whether it be sovereign or not sovereign or, quite frankly, whether... because it's going to be both sovereign and not sovereign is an opportunity for free societies to reexamine the amount of surveillance that takes place in our existing system and design digital systems that are not subject to identified surveillance, individualized surveillance, and are not subject to censorship, and yet at the same time are not incompatible with law enforcement.

There's no reason why in a world of digital networks, governments can't be nodes on blockchains, can observe anonymously transactions, can look for patterns, and can use probable cause of wrongdoing to interdict behavior, and ultimately subject to subpoena unmasked participants. And we may think that's so technologically advanced, it's what we do every day in highway law enforcement. We don't require people to give up their identity to get on the highway. People enter the freeway freely and government uses pattern recognition, speeding, reckless driving, driving with broken components, broken tailpipes, headlights. And then what do they do? They first interdict the behavior and then based upon probable cause of further law-breaking have constitutional granted rights to gather information including identity. So we can move away from our current system, which is an identity first in case people do something wrong financial system to an identity last based upon probable cause that people are in fact doing something wrong to gain their identity soon.

So once we go from an analog to a digital world of finance, our design choices are so much greater and there's no reason why we need to choose the same choices that China's chosen to use these systems for surveillance and censorship and ultimately political control, but it's time for we the people to get in the game. One of the glib comments I made in my book CryptoDad was money's too important to be left to central bankers and I have a great deal of respect for central bankers and I mean them, no disrespect, but money's as much a social construct as it is a government construct. And we, the people, need to be informing what does the digital money of the future, the digital dollars, the stablecoin dollars look like and not enough is being done right now to make sure that those free society based constructs are consistent with our constitutional principles and the rights of a free people.

Jo Ann Barefoot: When you say that it's possible that the currency should be designed to avoid the surveillance risks and the abuse of surveillance and could also be made compatible with law enforcement needs, is the key to it this point that you're making about not starting with identity or... Go a little bit deeper on that because I know that's, as you know, one of the biggest concerns that people have.

Chris Giancarlo: Well, Daniel Gorfine, who you know well, and I think you had on your show recently served as chief innovation officer at-

Jo Ann Barefoot: That was few days ago.

Chris Giancarlo: Yeah. We published a piece together recently in Central Banker Magazine and we pointed out that it really is time for our policymakers in Washington to become much more familiar with a lot of the new privacy enhancing technologies that are being developed. Things like zero knowledge proof and homomorphic encryption. There's no reason why government cannot begin to move away from what we currently use, which is an entity-based regulatory system where government gobbles up massive amounts of information tied to identity and move to a more activity-based regulatory system. In fact, the distributed ledger technology gives government the opportunity to observe transactional activity without needing to know the identity of market participants and to establish patterns that indicate potential for wrongdoing, and when that pattern is established and, of course, standards need to be established to protect privacy. But when government can show clear patterns of probable cause of lawmaking and the notion of probable cause goes back centuries, there is no absolute right to privacy in a free society, we have always balanced rights to privacy with law enforcement.

The notion that every man or every woman's home is their castle, fourth amendment right to privacy is compromised by evidence of lawbreaking going on within that castle in which case government have the right to invade that privacy. So we have long recognized in orderly civilization that there needs to be a balance between law enforcement and the individual, but there's no reason why in a law-abiding transaction the individual should as a first order have to

give up their identity so the government knows who they are in case they do something wrong. There's no reason why in a digital based system we cannot go using zero knowledge proofs and others to where all transactions are pseudonymous and government only has access to that identity when they can make a showing. And the burden should be on law enforcement to make a showing as it is in most of our criminal statutes where they can make a showing of probable cause of wrongdoing. We can move to that system.

And by the way, we're not in that system now because right now we know from many articles in The Wall Street Journal and elsewhere, that massive amounts of information is being handed over to our government. And, Jo Ann, you know me, I'm not an anti-government type. I'm not against law enforcement. I happen to have the honor of heading up a very important financial law enforcement agency, the CFTC for civil law enforcement. We have the successful financial system we do because it's well policed, and so we need to get to that stage, but operationally we can move away from our identity heavy analog system to an activity based. And the beauty of making government a node on a blockchain is the ability to analyze reams of anonymous trading data, anonymous transactional data and look for that probable cause.

Now a lot of work's going to have to be done around that to make that safe for free society. And my whole work, and the reason we formed the Digital Dollar Project is to move beyond stale debates that somehow assumes that if government does digital money, it's bad, but if the private sector, it's good without delving down a much deeper level. We've got to think about privacy in all forms of digital currency. I happen to believe that the right outcome for the United States is to have as many digital systems dollar-based as possible, and those include private sector run ones, and it may include public sector run ones. But all of them, without question, must be subject to the same standards of privacy protection, demonstrable, objectively confirmable, privacy protection.

Nobody should have to rely on either a government or a stablecoin operator to promise them that their information is not being expropriated, it's not being sold, it's not being used for commercial purposes, and it's not being handed over to government agencies under the guise that, "Hey, well, we're not subject to the First Amendment, we're not subject to the Bill of Rights, so we can take all your data," or anything touching the dollar. And if we do that, it will enhance the dollar's reserve currency status for generations to come.

Jo Ann Barefoot:

So let's talk a little bit more about what the pathway is because one of the issues that people raise is what the incentives are and what the appetite is to foster widespread adoption of these dollar-based principles in a time when we seem to be seeing more fragmentation of the world, more countries wanting to set up their own sovereign systems and close them, more countries interested in data localization so that there's not the opportunity for the data of their people to be exported and used in other ways. You and I were in an event a while back, I still remember a few years ago, where you were talking about the appetite of the world for making sure that whatever our system is, that it's transparent, that it's

backed by the rule of law, and so on. I remember someone in the group saying there plenty of countries that would just as soon have a choice between a system like that that would be promoting transparency and so on and a system that wouldn't. So how do you look at the pathway for spreading this system that you're talking about and getting uptake where you need-

Chris Giancarlo:

Yeah. My vision of the future and the next few decades, we'll see whether it's the correct one, is that the future is going to feature value storage and value transfer on a whole series of some correlated, some uncorrelated digital systems of value. I think the Chinese digital yuan with its surveillance and censorship capability will actually see a fair amount of export trade to close societies around the world that want those features that we'll see those as affirmative selling points to want to white label the digital yuan. You could see as much as a third of the globe in the next 20 years adopting the digital yuan as a benchmark currency, a value storage, and transfer system.

The Europeans are absolutely launching a digital euro to set global standards for what digital currency looks like, but also to promote the Euro as a reserve currency. And then you're going to have private operators of stablecoins, some of which will be open architecture and interoperable, others will be closed systems operated by those stablecoin operators. So you could see a half dozen to a dozen different or more digital distributed ledger systems operating in the globe in the next 15 to 20 years. And whether one will have the choice to choose one or the other, whether one will be forced. It's interesting that along with developing its digital yuan, China has banned Bitcoin and Ethereum. And there's a number of reasons for that. They don't want their people to have dollar exposure, but quite frankly they don't want competition to their digital euro. And if you listen to some of the statements of some of our European colleagues in regulation, they say some of the same things about the threat of stablecoins to a digital euro.

And it wouldn't surprise me to see either soft or hard bands on competition to the digital euro and the degree of interoperability of these different systems is not clear. So your point about a future of greater Balkanization, I'm sad to think, but may in fact be where we're headed only instead of informal zones like the euro zone or the dollar zone, which are built upon the influence of that currency, these going to be real digital operating systems that you're going to have to participate in order to transact in our financial system ecosystems. And so the question of interoperability is going to be critical, but I would argue the most important is going to be what values do those systems encode? We know what values the digital yuan, the e-CNY is going to encode. It's becoming clearer what values the digital euro is going to encode.

And quite frankly, I'm not overly impressed with its commitment to personal privacy. There is heads of the European Bank for international settlements, innovation lab out making statements like we're going to know where every euro goes. Well, if they know that and know who's moving it, that's not a very private system. So I think this future world is going to come down to what values

do these systems encode, and that's where the United States needs to step forward and be a leader. In the same way that in the first wave of the internet, that internet of value, 25 years ago, the United States insisted that the internet be one of open architecture and one that stood up for freedom of speech and freedom of expression. We need to make sure that this wave of the internet simply encodes the values of free society, which includes the right to economic privacy, the right to freedom of expression financially.

And unfortunately the United States is not at the leadership table insisting on those values right now. In fact, some of the moves of the United States, whether it's the IRS demanding access to all digital wallets and trying to shut down mixers says to me that the United States is not moving in the direction of projecting into this new future of digitally network systems of value are constitutional values. If anything, we seem to be approaching it like a China light approach as opposed to an American reinforced constitutional approach. And if we're not going to stand up for economic freedom in the digital future of money, I don't know who else around the globe is going to do so. Maybe we need to look to the Britts, but I'd rather we look to ourselves or at least some combination of us and other freedom loving countries in the world.

And so again, that's why we started the Digital Dollar Foundation to talk about how do we future-proof the dollar? How do we preserve its reserve currency status? And most importantly, how do we encode those constitutional rights to economic and social liberty in a digital future of money that is going to have central bank digital currencies, it's going to have stablecoins, it's going to have competing and in some cases compatible in some cases incompatible systems of value. And some of them are going to affirmatively take very different value propositions to the ones that we believe in or we certainly used to believe in here in the United States of America.

Jo Ann Barefoot: So let's go to the US picture what's happening in policy on the digital dollar concept? What's the Digital Dollar Project working on? What are you hoping to see that we have-

Chris Giancarlo: So moving aside from all these conceptual arguments that we make at the Digital Dollar Project, we're doing a lot of really good practical work. So we have done now two pilots. We have several more under wraps. We've announced two and we've published white papers. One on looking at what we call wholesale central bank digital currency, the use of central bank digital currency and settling securities transactions. We partnered with a number of global banks, alongside The Depository Trust & Clearing Corporation, which as you know operates the plumbing of Wall Street, the clearing and settlement of securities and worked with them on looking at how central bank digital currency could enable us to get to what's called atomic settlement. That is settlement of transaction by transaction. And, of course, as we expected, but we're very pleased to say it in fact showed that essential bank digital currency would make that prospect a greater reality with greater efficiency and lower cost and immediate reduction in timeframes.

We also announced just a few months ago the first retail pilot looking at global remittances. As you know, we have a lot of expatriates in our country that remit their earnings back to their home country. In the case of the US dollar, the largest corridors between the United States and the Philippines, we worked with a Filipino bank and we worked with Western Union looking at global remittances. And you can find our white paper on that project, on our website, digitaldollarproject.org, along with all our work. And that also showed that a US digital dollar would help facilitate global remittances, a dramatic reduction in cost, transaction time and certainty of transaction. So those are just two of the pilots. We have more pilots underway. Those two pilots are the first pilots in history to look at a US Central Bank Digital Currency, and they're the first pilots in history of any currency denomination to have been funded entirely by the private sector.

No public sector monies, no taxpayer monies used to do that, and will continue to do pilot projects in the months and the years to come. We're also going to be holding in late November this year, the first ever global convening on US soil of both official sector participants, central banks, and finance ministries, as well as major private sector innovators and payments and banking together to talk about what should be the global standards of interoperability, of cyber resilience, of financial inclusion for digital currency systems, both sovereign and non-sovereign coming out of democratic societies coming out of open and free societies. Again, China set a benchmark for what closed societies can do with central bank digital currency. We want to start trying to develop a benchmark for what a digital currency, both sovereign and non-sovereign coming out of free society looks like. And we'll be doing that the week after Thanksgiving at a resort in Virginia, just outside of Washington.

Jo Ann Barefoot: And we're going to run short on time. One question I also wanted to ask you up back to the issue of the pathway is that as a new form of transacting begins to take shape, the cost per transaction is going to be high presumably until you get scale. And I wonder how you think about who's going to pay for helping societies climb that curve? What's going to be the value proposition to the taxpayer or the citizen who is one way or the other probably picking up some of the bill as we actually move towards scale in these things? And are the use cases compelling enough that it's going to get us over that hump of running a less efficient system maybe in the short-term or tell me if you don't agree.

Chris Giancarlo: Well, so first of all, the good news is that I think in our free societies, I think a lot of that cost will be built by innovative companies such as our stablecoin operators. And I hope nothing I've said today gives anybody the impression that I'm not a huge supporter of the innovation being done by stablecoin operators because they're doing very, very important innovation that I think is going to serve us very well in the long-term. So I think that's how it gets paid for. Let me give you two examples, one at the micro-level and one at the macro-level of the power of this innovation and why once it gets to scale it's very important. So let's take the micro one. We know that the engine of growth of our economy and certainly the driver of employment is small business. Most small businesses

that fail, fail because of cashflow issues. They simply can't match up sufficiently the cashflow coming in with their costs of operation.

And in a world where most payments are made with credit cards, and it's certainly in the United States, we're not as fast in our turnaround as in Europe, some merchants are waiting for up to 30 days to get paid for a transaction done at the beginning of the month, which means that their suppliers and vendors are also waiting to get paid. In a world of digital currency, and this includes online small businesses, the payment cycle is immediate. Meaning, that the moment a transaction is made that digital currency is now in their digital till available to pay their supplier. So the cashflow cycle for small business can be dramatically shortened, which could be the difference between success and failure for small business, but also could mean that the velocity of money in our economy, the ability to pay vendors, the ability to start and direct businesses and change direction of business is going to be that much, is going to remarkably faster. And at a micro-level that's going to have a dramatic input.

Now let's talk about a macro-level. It's been estimated that the cost of just moving money around the globe in our bank-based finance system is somewhere between 1% and 2% of the globe's GDP each year just to move money. Well, in a world going back where growth is slowing, imagine if we can get that 1% to 2% GDP back into the economy and not in sunk costs of just moving money. What we're already seeing with stablecoins, the ability to move money around the globe is instantaneous and at very low cost with much greater certainty bypassing a lot of those correspondent banking institutions that exist around the globe simply for no other purpose other than moving money around the globe. And already some of our large correspondent banks like Citigroup are experimenting with using digital tokens, their own bank minted digital coins to move money in the bank at much lower costs.

And why are they doing it? Because they realize that their correspondent banking franchise is going to be disrupted by this new innovation and they want to get ahead of it. So the point I'm making is that whether it's at the micro-level increasing the velocity of money for small business and addressing that cashflow mismatch that has often drove a lot of small businesses out of business. Or at the macro-level of recovering a lot of the world's productivity or enhancing a lot of the world's productivity and helping to enhance a world that's going into some perhaps a slower growth phase. This innovation could have dramatic impact on the global economy and regional economies as well. So that's just one impact. I would say, the other thing though is that rarely when technology is approaching, and I don't think we have it in this case, do we have the opportunity to put our hand up and say, "Well, it's just too much to contemplate, so just stop it."

It doesn't go away. I mean, Kodak didn't have the ability to tell the internet not to displace its business model with the ability to share photographs around the world seconds after being taken. Sears, Roebuck didn't have the ability to stop Amazon and what it was able to do, I mean, innovation is going to happen. The

internet is going to do to finance and banking and money what it's done to so many other things, that's going to be very disruptive. And we at the United States that benefited so greatly from the old-based analog system. Unfortunately we don't have the luxury of saying, "It's going to be too disruptive, let's just not do it." It's going to happen. And so we can either choose to lead, follow or just get out of the way. And I very much hope we'll lead.

Jo Ann Barefoot: Do you want to say anything about stablecoin regulation either in the US where it's still a very active topic or anywhere else? What are the important things to get right on that?

Chris Giancarlo: Well, I very much support a regulatory regime for stablecoins. We need to do it, we need to clarify regulatory boundaries amongst the different regulators, we need to create a good licensing regime for stablecoins, we need to make sure that stablecoins claims of stabilization are accurate, we need to determine what those stabilization mechanisms work if they're based on the dollar and how that works. So I'm a big supporter of the stablecoin legislation that's been introduced in the house with one caveat. I published an op-ed in the Hill Magazine where I said there's one flaw in the legislation, and that is it doesn't speak directly to privacy and we cannot allow stablecoins to become the new social media platforms that governments can pressure to ban otherwise lawful transactions in the same way government leaned on social media platforms to ban otherwise lawful speech.

So we do need to address the issue of what stablecoin operators can do with the information they gather and how privacy is protected. And we need to make sure that government licensing authorities cannot use their licensing power to force stablecoin operators to disallow otherwise lawful legal transactions. I think that's the one flaw in the legislation. I will say that one of the big drivers in driving public officials to want to pass stablecoin legislation is the need to augment diminishing liquidity in our government bond markets and to create new sources of demand for government securities in the form of stablecoin operators. One of the unintended consequences of Dodd-Frank, although there are many out there that say they told you so, was that the capital requirements on bank balance sheets have made banks less willing to warehouse government debt than they used to be. And some of that liquidity has been made up by hedge funds and proprietary trading firms.

But we've seen liquidity shortages in our government bond market, especially in recent years, including this year. And I think there's a perception out there that a stablecoin industry, a healthy stablecoin, a well-regulated stablecoin industry will drive greater enhanced demand for treasury securities. I haven't studied that particularly myself, but it's a plausible argument and it's not an unfair argument, I think stablecoin operators have an important role to play, not just as holders of government securities, but as payment operators. And if we can get the privacy issue right, I think it's a very important, and as I said before, I'd like to see as many forms of digital money systems dollar-based as possible in a world where we're going to have those that are yuan-based and those are going to be

euro-based. And I think if we get the privacy issue right, people will flock the dollar-based deposits because they know their privacy is safe if it's dollar-based in a way that it might not be safe if it's euro-based and certainly won't be safe if it's digital yuan-based.

Jo Ann Barefoot: So you have given us so much to think about. I think that's a great note to end on. Is there anything we haven't talked about that you want to add in closing?

Chris Giancarlo: Other than to say we could have gone on for another hour, and maybe we'll find another hour, maybe next year to talk about what the latest developments will be then. And perhaps I can come on and share with your listeners what we're able to achieve at our global convening on digital currency and maybe take some input from your audience as to what we should be thinking about. You've got probably one of the most knowledgeable audiences on the intersection of technology regulation and policy. There is. And maybe they might have some thoughts on this, which I'd love to hear.

Jo Ann Barefoot: Yeah, we do indeed. That we would encourage people to reach out to us at AIR. And then I think you already mentioned, but how can people reach the Digital Dollar Project?

Chris Giancarlo: So it's digitaldollarproject.org and everything we do and everything we publish and all our white papers and all our news is there. So I invite your listeners including the articles I'd mentioned throughout this call. But, Jo Ann, if you could maybe also post them in the talk notes, that would be great as well.

Jo Ann Barefoot: I was just about to say that we will link to all of those in the show notes and we'll look forward to talking again soon. Chris Giancarlo, I cannot thank you enough for being my guest today. It's been fascinating.

Chris Giancarlo: Well, the gratitude is mine, Jo Ann. Thank you so much. It's great being with.