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Welcome to a new episode of BFRR, our Bitcoin, Fiat and Rock and Roll podcast that explores the intersection of traditional finance, digital assets and digital money and helps you understand how digital assets and money will evolve in the future. I'm co-host Jonas and today I'm joined by John Keefe. John is one of the OGs when it comes to central bank digital currencies or CBDCs. would say I remember my early CBDC days, let's say in 2017 or 18.

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pretty well when I was studying John's articles and also his blog, which was already around at the time. So John is from my perspective, one of really the leading experts on CBDC and digital money generally on a global scale and has also decades of experience in central banking, was with the bank of Canada for 25 years and then with the international monetary fund for 16 years until he officially retired. think it was 2021. So John, welcome to our podcast. It's a true pleasure to have you here. Thanks, Jonas. It's a great pleasure to be here.

01:08
looking forward to some interesting discussions. Definitely. And first question, Sean, is on your retirement because you seem to be everywhere these days. So you're doing CVDC missions here and there. You seem to work more projects than ever. Are you really retired or what's going on? Yeah, my wife might have a few things to say about that. She said, had a picture of me retiring and puttering about the house, helping with the gardening and that sort of thing. And yet I say I'm busier now with the work of monitoring.

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digital currency markets, FinTech and so on, then probably I was at the IMF. It seems that way anyways. It seems like there's endless developments taking place. It's just a fascinating area. I mean, I can't think of anything better to do in retirement than doing what I do now. So yeah, I stayed retirement in quotation marks. when in reality, it's more like a late career change. But it's also great to see because I guess since you are in this space for so such a long time, it's just...

02:04
A lot of fun, you said, right? Monitoring this. I mean, you have your blog where you kind of daily write all the updates on digital money, which I always use and read. So I think I just have two newsletter subscriptions generally on the topics. One is you. So I definitely appreciate this and we will share this also in the show notes for people that are interested to show that and to see that to participate.

02:27
So I think John, it was really more than overdue to invite you to this podcast. So until we switched to English or when we switched to English in January, there was really something say, okay, we have to have to get John in the show pretty quickly. I mean, we are working together for so many years already, be it via our CBDC tracker. So the global CBDC project or status quo database. And you also involved some of the work we did at the Digital Euro Association. We also had a lot of fun when we did the CBDC mission to Bhutan a few years back.

02:56
And our discussions were, I think, always inspiring. So yeah, I'm really looking forward to this episode today. Yeah, yeah, for sure. Yeah, we've had a lot of interest in things together. So, and this will be one another one. Definitely. And what we will cover today is we will primarily talk about CBDCs and primarily about John's perspective on wholesale retail CBDC. Also some lessons learned from practical projects, because as I mentioned, John is very active when it also comes to CBDC missions where he's really kind of

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say traveling the world and exploring CBDC, supporting central banks on their CBDC journey. But I'm sure we will also dive into some other topics like stablecoins, because there is also lot of momentum and everybody who reads John's daily sees that more and more information is kind of turning from CBDC into stablecoins, at least the fraction of news. I'm sure we can and we will discuss this later on.

03:50
Let's get started, John. When I went into the CBDC space again, 2017, 18, I had the feeling you were there already for a very, very long time. So when did you actually start to study CBDCs and go into the space? Actually, when I think about it, that would go back to about that same time, although I was aware of the developments. And it's interesting you talk about how we've evolved in wholesale, retail, CBDC, stable coins, and then more recently tokenized deposits. But when I started,

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Most of the focus was actually on wholesale CBDC. were projects run out of the ECB, the Bank of Canada and Japan, so on Project Jasper. So it was all about wholesale CBDC, the concept being to essentially being to replace existing large payment systems like real-time gross settlement systems, which are run in traditional centralized ledgers, but replace them with blockchain or DLT, distributed ledger technology-based platforms.

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And most of those kind of came and went, because I think they found that the old style RTGS systems work just fine, and there was no need to turn everything upside down and replace them with something that's running on a different kind of ledger. in a way, those kind of fizzled out for a few years until other use cases came later. And then around that same time, then retail or general purpose CBDC started to become more interesting. And about that time, I was involved in an IMF paper that

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established the big picture aspects of retail and CBD, see a covered things like the things that we do. We see a lot of papers being written on now, things like monetary policy impact, financial stability impact. And I was responsible for this little section about three quarters of the way through the Chaklar section that was all about the lay of the land, which is almost like the prototype for the surveillance work that I do now through the Mike Kiffmeister dailies and weeklies and

05:46
monthlies and I remember when in that paper we had a table and he had about 10 central banks at that time that were studying a central bank digital currency. table because if you follow my blog, you'll see that I've published a table and now it's gotten to the point where I've had to bring the font size down to tiny little font because I have to fit now 105 jurisdictions that are experimenting or launching piloting.

06:15
retail CBDC. So that was the lay of the land there. And there was also a lot of these existential questions I still deal with today is what is retail CBDC? Because the landscape's kind of blurred. I I like to stick with the very, very short and simple BIS definition, which basically says it's a form of digital money that's issued by the central bank for general purpose usage. And that's simple.

06:45
yet you'll get a lot of different wannabes, I call them. So it might be in this case of Palau, for instance, they've been tinkering around with the idea of a stable coin issued by the government and there's no central bank there. so in that case, it's not a central bank digital currency, it's a stable coin. Not that that diminishes it in any way. In fact, stable coins have become the topic to sure today.

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07:13
But it's important to draw the lines, right? That's also what we always try to do with the CBDC tracker to be very precise, to follow the definitions because otherwise all the conversations that get kind of messed up and yeah. Yeah, for instance, you have the Cambodia's Project Bacan, which is essentially just a retail fast payment system that's run by the central bank and it happens to be on a blockchain, that kind of, that's where the...

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blurring of lines often takes place because people just say, CBDC has to be based on distributed ledger technology. so any kind of payment system that is run with any kind of central bank blessing or involvement that's on distributed ledger technology platforms, well, that's a CBDC, which is not true at all because a CBDC by the definition I just gave is, I never mentioned technology. It's purely, it's digital and it could be based on a centralized platform.

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And for everybody who's listening to this, when we zoom like seven ideas back John, the time you talked about, there was really so much around blockchain and CBDC. So many people mixed this up, right? To say, CBDC has to be in a blockchain. And I'm pretty happy that today a lot of people understood that this is not necessarily the case. So if you're new to this space, keep this in mind, a CBDC is not necessarily really based on a distributed ledger or a blockchain in this regard.

08:36
What's interesting though is that when you get down to these definitions, retail CBDC, we're always very, I'm always pounding the podium and saying it's technology neutral. And when we say wholesale CBDC, which is really just an extension, and I always think as of the real-time growth settlement platforms that are run by central banks, mean, by wholesale, we mean it's only interbank, only banks and other payment system participants can participate. So it's not opening up the...

09:05
open to the general public. But when we say wholesale CBDC, we generally mean there we are technology specific. It is based on distributed ledger technology. In fact, the European Central Bank has gone so far as to erase the term wholesale CBDC completely from their website, even though they're under their umbrella. There's numerous or a couple of different to...

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experiments taking place that use what everyone else calls wholesale CBDC, but they just call it central bank money on a distributed ledger technology platform. I don't even know if they get specific, even specific to the ADLT, but they're basically saying that wholesale CBDC has been around as long as central bank money has been digital, which goes back, you could argue, to the days of the invention of the telegraph back in the 1800s.

10:01
to these 10 cent Go I remember when I had a podcast episode with Ulrich Binsall a few weeks back, we talked about exactly the same, the terminology is generally not good, right? So also stablecoin, not a good term. Cryptocurrency is not a good term. Synthetic CBDC, not a good term. Also CBDC, think not a good term in the sense, but I mean, that's just the reality we are living in. And what I found interesting, John, what you just said, that in the beginning it was primarily wholesale CBDCs, also when you started looking into this.

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It then became way more retail CBDC. And then I think the last two years or so, it kind of went a little bit back in momentum to wholesale CBDC. So I remember that the topic or the BIS is always publishing its annual work on where do we stand on CBDC. And I think it was last year, if I'm not mistaken, that they said there's more interest now in wholesale than in

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retail. So it seems a little bit to come back to the roots. Would you, would you agree? Definitely. And I mean, the more recent development is tokenized deposits, which also can use wholesale CBDC for the

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infrastructure that lies below it, way the deposit transfers from person A to B, something has to happen somewhere else to make sure the money actually goes from bank A to bank B. one way that can happen is through wholesale CBDC. think, and also I think, well, I said earlier that the early experiments found that they kind of resulted in the conclusion of so what, you know, what use does just put in our

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RTGS system or whatever on a DLT platform. I think what's happened since then, especially very recently, is the blossom in new ways that can exploit the advantages of a DLT. For instance, things like settling securities transactions on systemically important financial market infrastructures. And the poster child for that to me is the Swiss National Bank's project Helvetia, which is actually now in pilot, which is unusual because there's been a few...

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retail CBDC pilots we can talk about later, but there's actually been no wholesale CBDC pilots, just proof of concepts up till now. And so this is the real deal. they're finding that there are advantages to be able to so-called atomically settle securities. Cause the ideal on a systemically important security settlement platform is the transfer securities and the payment take place absolutely simultaneously.

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And that doesn't work so well in the traditional ledger system. So with the DLT one, you can have a smart contract that ensures that the very moment that the securities transfer from person A to B, the funds get from there across the accounts at exactly the same time. Cause if it does, that doesn't happen. Things can happen, right? If the payment fails, that means that person B has these securities that they haven't paid for. And that's a risk to the platform.

12:56
That's, and also the ECBs experimented with, has been experimenting with similar efforts. And so I think that's, to me, that's one, and then of course it's the cross border payment applications like the BIS. Well, it was the start launched by the BIS, but we had the M-Bridge multiple CBDC platform that's now, I guess, in the minimal viable product phase, I think. So that could be interesting.

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Yeah, and I guess what you just described was a very well summary on where the value propositions also lie for HOSAC, VDC, right? When it really comes to this atomic swap capabilities, delivery versus payment, for example, the settlement of a digital asset, a digital bond, or maybe also really PVP. So for cross-border payments, we know is inefficient today in a lot of instances where a smart contract can really help to make the swap maybe cheaply and instantaneously. So the benefits, I think, are here. And this is also why

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I thought it was a really good way for the ECB to say, we continue the work on this experimentation. Let's call it today, HoseCVDC, because there is a clear, it seems to be a clear need. The industry also liked it. A lot of people participated in the trials from the ECB, right? But I also, I'm also curious, like, do you have a feeling why there is this mismatch between HoseCVDC having a clear use case, people being interested and still not, you know, being in pilot mode or in fully launch, while some retail CBDCs are already?

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14:24
Yeah, I think like you just said, the wholesale CBDC efforts, clearly they meet an unmet need. They reduce risk and they make these transactions unambiguously more efficient. think in the retail CBDC case, well, I think it was the House of Lords, the UK House of Lords, I think they concluded that retail CBDC is a solution looking for a problem. And I think

14:52
In some cases that is. And I mean, I live in the U.S. and as many of you might know, the President Trump, almost like week one of his presidency, signed an executive order that told the Fed not to seize all CBDC work. I I think that's almost a non-event because I don't think the Fed was really going very far in that direction anyways. from what I see, I've got almost too many.

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digital payment options here in the US. The CBDC would be kind of a redundant product. So I think when you look around advanced economy countries, the use case becomes really hard to make. I I think one would be possibly the Fed issue, the retail CBDC, they could offer it so it's totally costless. So it would undercut all the other retail payment means, whatever they might be, debit cards or Venmo, PayPal, and so on.

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Of course, in the US, that's a touchy political topic because the Fed is actually not supposed to be competing with the private sector. although, just as an aside, they kind of are because they introduced this FedNow fast payment system that is competing with an existing and very, very popular system called Zelle that is run by the private sector. But again, I think the reason why they would say FedNow is necessary is because the smaller

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banks that participate in that Zelle network feel that they're being railroaded around by the large banks who control Zelle. Democratization is what they're aiming at, I think. So if I understand you correctly, John, also you basically say that this Trump executive order, mean, because globally, of course, everybody was looking in that it was saying, look, he forbids CBDC. So we said, you know, this is a really massive step. But if I understand you correctly, John, you're saying, I mean, yes, he did that.

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even if it did not, there is not like in the US, there is not a convincing case for it yet. And the Fed is not convinced that they should go down this path. Like in contrast to what the ECB is doing here in Europe, is this correct? Yeah. And also in my travel world, I get involved in several IMF projects. We are in Bhutan too. And what you observe is that there's often you walk into these countries and right away you see that they do already have really good...

17:16
payment systems in place in Bhutan. It was a QR code based system. I've been, was in Bolivia a few weeks ago, because the central bank of Bolivia is also pondering issuing the CBDC. But the first thing you notice is that the central bank is already like, they don't own it, but they kind of pushed and sponsored a QR code based system that everybody loves and uses. And so the CBDC seems like a redundant payment medium there.

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So it always seems like there's another way you can achieve whatever is, people will say, well, CBDC can offer a costless way for people to pay for things. Well, it's costless in Bolivia too, because they've got regulations that say basically that that QR code based system must be free for up to a certain payment amount. And it's also, and you might say, well, we need payment systems interoperable.

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That would be an argument you could use in the US. I'm on say PayPal and somebody's on some other platform that you can't cross funds between them. No problem. Bolivia basically mandated interoperability. So whatever bank you're using for your payments, it has to be able to interoperate with other banks. And then people will say, well, you need it to improve financial inclusion. But I was fine that those arguments are so fuzzy. It's like the people advocate for that.

18:41
motivation, assume that it goes without saying, I don't have to explain it. mean, I think, you know, the CBDC will improve financial inclusion without really being very concrete about it. I think though there are some places where they may be called for. think Europe might be an exception in that because of the way it's structured, you as a currency union, the idea of having the currency that can be used seamlessly in any country within within the eurozone.

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that might be a good use case. Mind you, someone could say that can be regulated and legislated. You could basically set up some kind of interoperability framework that has private sector payments interoperable across borders. Exactly. And I mean, I really liked what you said about the US that you have so many different payment options. I mean, we also do have a lot of different payment options in Europe, right? So however you wanna pay, if you wanna preserve your privacy, use cash, you can use...

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Paypal you can use the credit card companies bank transfer etc But I mean the reason why the ECB is going down this rabbit hole is because most of them are US dollar based right and are Basically coming from the US and I mean we see currently at least here from a European perspective that at least a lot of a lot of stuff is happening that Makes such moves which I thought 10 years ago would be totally unrealistic or you know kind of every day a little bit more realistic So I think generally having an autonomous

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payment system that is then interoperable is a good step? Is a CBDC the only solution? No. Is it a good solution? mean, it depends on a lot of initiatives, a of other aspects. mean, as a central bank, you can always argue we tried to leave it to the market to create a European payment solution and it did not really work over the past decade. So now we are taking it over. So yeah, it's somewhere in between where we currently stand in Europe with this digital euro debate.

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Well, frustration I can sometimes have as I travel the world, including to Frankfurt, Germany, where I was for the DAA conference earlier this year, is this preference for cash. I mean, I central banks hope that a CBDZ can break that. I'm skeptical, but I I had an experience in Frankfurt where I went to a pizza shop and I ordered up a pizza and some wine and having a good time. And then when it came time to pay the bill, I flashed my card and this guy said, we don't take that here.

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I had to scurry off to an ATM to get some cash, but I just wonder, you know, what would be his aversion to using digital payments? It could be that he doesn't like the cut that they take. maybe. And I mean, often that's the case, right? For US dollar ones, I mean, the German basically card or the German scheme, that's pretty cheap also for merchants, but for credit card companies, this cut can be pretty substantial, right? So that's definitely, I guess, one reason. Also often people in Germany, I mean, at least to me, it seems they pretend or like.

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merchants that the terminal is not working, right? So, ah, no, it's out today because they basically don't want to pay the fees. At least that's one reason. But the Germans, of

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course, also love cash. I mean, we discussed this, John, when we met very often that this privacy topic is very important for Germans, at least, right? So that you don't want somebody who shouldn't know about your finances really know it. I also see that in my generation, this decreases in importance because

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A lot of people are just, you know, I don't really care a lot, but most generations really do. And this is also why I think, and we discussed this in this podcast also a lot, that this privacy piece of the digital euro is very important so that there is a version where you can pay with similar privacy as cash, because then it has at least some feature that existing forms of money, these digital forms of money do not have, and it needs, you know, a distinguishment, otherwise people will never use it.

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Because people, I mean, they always stick to their habits, so they are not switching instead, except they have an incentive from a product perspective or a financial incentive maybe. Yeah, of all the central banks that are exploring CBDC, I'm most interested or pleased with what I see in Europe. And Israel, think, has fallen in the same pattern. They're really striving for credible privacy, at least a privacy option for certain smaller amounts and so on, generally for proximity payments. the ECBs...

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To me, the credibility of the ECB's efforts is kind of signaled by the amount of money they're going to, I think there was an RFP that went out earlier this year with, I think it was like one and half. Yeah, 1.2 billion last year. Yeah. I mean, they're really serious about this. And, you know, as you and I have discussed many times, when the central bank says they can't offer privacy in payments, that's baloney. We know that the

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technology is there. That's a policy decision and that's fine. They can just say that, but don't tell me that technology doesn't exist to make digital payments private. There's lots of ways to do that. Exactly. If someone's going do this, it's going to be, I think, Europe. And then we know that if Europe goes, Israel said that they would probably go too because they've kind of put their efforts into sort of low gears.

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wait to see what the ECB does. But what is your general feeling, John, on retail CBDC? So you mentioned the euro area. And I'm also following your blog. I have the feeling at least that way more central banks now kind of opt out from retail CBDC. like you said from the UK case for now, we don't need this immediately. Let's focus our intention, our resources, our money on other topics. Would you agree or how do you see the general current momentum, let's say, on retail CBDC? No, definitely momentum is

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fade in either there's complete cancellations of programs like you saw in the US and Canada. I think even Sweden where the whole CBDC teams in those cases have been shut down and dispersed. so then there's the ones like Japan and someone who are also exploring, but they keep reminding us that we're exploring, but we don't necessarily plan to issue one. And I always think of it like the break in case of emergency thing. That's how Canada had been.

24:54
thinking about CBDC that they felt that the day came where they needed to offer a retail CBDC, they know that it takes a long time to put the pieces in place. So they kind of want to have be poised so they could quickly mobilize. Because we know in the case of Europe, for instance, it their timeline is really long. You'll see these headlines, for instance, saying, implying that Christine Lagarde was pleading with parliament to pass this legislation so they could

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launch in October this year. And that was, that's not what she said. That's just to launch the next phase. Like they're still in the preparation phase. So the timeline in the case of the digital Euro, the best would be like a couple of years before it's even launched. Cause you need to build a prototype and then you have to do a pilot and then you have to, you know, and then you have to review the pilot and maybe go through several iterations.

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And you have to roll it out for hundreds of millions of people, right? Integrate this in all infrastructures, it's legal tender. So from day one, it has to be accepted as well, right? So that's also something which I just remember I read a paper at some point how complicated it was to disseminate the Euro banknotes when the Euro was introduced across the Euro area. And that was of course a major lift. Like we're planning this for years and executing for months. I mean, obviously for digital currencies, that's a little bit easier.

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But still, all the countries need to offer it needs to be integrated via terminals. Banks have an important role as we know. The people, the end users need to get the devices, need to get the apps right. So that typically takes time. So I agree. think if the digital will come, what we don't know yet, at least four years, would say. Maybe not surprising if it's five or so, but yeah. So a lot of central banks.

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just wait and see. And I agree, Sean, I think Japan is pretty interesting with what they are doing, what they're studying, also a high focus on privacy in this dimension. But my feeling is that there is no, mean, that the ECB is currently, you will, one of the central bank that is most realistic to introduce a Rita CBRC soon. I mean, maybe of course we have like Russia and some of these type of countries, which I think are quicker, right? Would you agree with that? Or do you see other data points for other speeding up besides the one that fade out?

27:04
Well, think actually there's a few lessons from those that sped out, right? We actually have three launched CBDs. We've got the Bank of Jamaica, the Bahamas with their Sandal, and we've got the E-Nira in Nigeria. And what's notable about all of them is that TICUP has been rather underwhelming. And they're almost like poster children for not doing right all the things you just ran through. There was a minimal period of

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of education, is necessary, educating people about this new product. They all kind of forgot to get that infrastructure in place. if you're gonna have, usually for most people making payments, the number one use case is buying stuff at stores and merchants. And so they have to have point of sale devices to do that. I think in all three cases that that wasn't done. They didn't basically get the point of sale devices out to the merchants. So no one could spend it.

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In fact, this is kind of an interest in history here because I spent a lot of my time thinking about offline payments and there was a system called Mondex that was introduced back in the 1990s that was a great system as well, way ahead of its time and then it failed and it was because of this point of sale device problem. Then there's a chicken and egg problem because they had to convince merchants to get to buy or lease these point of sale devices for something they weren't even sure they would ever get any use from. So that was forgotten, I think in...

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And in those cases, I think they're scrambling now to catch up and put these point of sale devices in place. the next thing that this, and I think the, IE Nair in Nigeria is the poster child for this mistake is they just launched it without telling and working with the banks and the banks were expected to do all the onboarding and KYC, know your customer and all the kinds of things that are needed to actually get CBDC into people's devices.

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And it was almost a revolt where the banks basically worked to thwart the system. And I don't know where that stands now, but I don't think it's going very, very far, very fast, I think. I think there's a little bit of a blame game there too. hear that they might be thinking of firing the company that actually helped them develop this thing as though it's a technology problem. And it's not, it's not a technology problem. Even though the Eastern Caribbean Central Bank, which used the same vendor, they did a

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pilot, which ended sometime in 2024. And they actually had a crash where it went down for the whole month. And so there you I suppose you could blame the technology in that case was using hyperledger fabric. But yeah, think some certificates expired or something. which is, which is actually not a tech. It's a technology problem, but not a problem with the technology. It's the it's more of a it without what the what I heard is was a dispute about who actually was responsible for

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doing that. Like I think the central bank was saying that the vendor, that's your problem. You've got to make sure the certificate is updated. And that would say, well, no, this is your CBDC. You ought to be looking out for certificate expiry. So, I that brings it to the fore. Another problem I think that's faced by a lot of the emerging market central banks that are thinking about CBDC. I think they totally underestimate the resources required. And many of these central banks are not like the

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monolithic ECBs and the Bank of Canada's of the world with thousands of staff. we remember we went in Bhutan, for instance. think the total staff of the Bank of Bhutan is like one department in a typical big bank. the resources you have to put into these efforts is huge. I'm not even sure if some of those smaller country central banks are even capable of running something like that.

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Yeah, so what I hear from you John, maybe to summarize that key hurdles or key aspects you have to look at as a central bank when you are thinking about a CBDC is A, like what's the real use case or what is the value proposition? What do you do? How do you basically provide a better payment solution compared to the existing ones? In which dimension is your solution better that people in the end might also use it? Then be really clear on governance. So you just mentioned like who's responsible for what and don't blame, just blame each other, but be...

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be very clear. Then thirdly, don't underestimate the ecosystem. So this fits on the acceptance side, right? The merchants, the PSPs. Obviously, if you're not integrated with the merchants and the supply, there will not be a demand. It's a chicken and egg thingy. And also, of course, consider banks, work together with players that are well connected, that do have the end user relationship. And lastly, was the fifth aspect, is really...

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be mindful of the resources or put differently, be mindful that you will need resources if you are very deep into that and want to go around this path. Is this kind of a good summary? Do you have other, I mean, from your missions, maybe some other key lessons learned or recommendations you would give to central banks on the retail CBDC? Well, actually, one

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thing I would think about if you're thinking, if you want to have a CBDC that's really compelling, I think we talked about privacy earlier. I think that's one aspect that many don't get, especially in countries where

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cash rules, cash rules for a reason. Like when I was in Bolivia, we're told the cash rules and they always use this term because there's a huge informal economy. what we're talking about is an economy that is trying to operate outside any prying eyes. They want to do transactions that aren't gonna be taxed. So there's all kinds of reasons they don't wanna leave any kind of trail. So I think, yeah, credible privacy is really critical to.

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especially if you are a planet and many of these smaller countries, one of their motivations is very practical. They pay enormous costs for producing counterfeit resistant banknotes. And not just producing them, but moving them around, delivering them and so on. I that was kind of a, I think that's a problem that we're seeing in Bolivia. They have a US dollar shortage. Well, guess who? Guess we're all the banknotes are printed. They're printed. There's no banknote printer in Bolivia.

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And that's true of most of these smaller country central banks. They outsource it to big American, Canadian, and European banknote companies. You've got to pay for that. So they're kind of keen to reduce that cost. so I think that to do that, they're going to have to convince those privacy focused cash users that they've got a credibly private digital currency. I think the other thing that I'm really kind of keen on

33:47
more consideration being given to remunerated CBDC, one that pays interest. it's interesting that you mentioned O'Rourke Bensile earlier, and he wrote a paper, a really nice paper back in the early 20s. I can't remember exactly when, but he had this idea of tiered remuneration. Because just to step back for a minute, no central banks very clearly say right at the start, this will not be remunerated. There'll be no interest paid on this CBDC. And the reason for that is they're afraid

34:16
that a CBDC could undermine the commercial banks because people will say, why do I want to keep my money in commercial banks at some trivial interest rate that's typically paid, especially on checking accounts and so on. When I can, you know, I could put my money into a CBDC that offers some rate that's, you know, somewhere near the policy rate of the central bank. And so they all say, no, no, this is clearly going to be, it's meant to be cash like.

34:45
N zero, et cetera, et cetera. So they said that like it's a mantra, but I don't think, I think that there should be some more flexible thinking applied to there. I like the BinSyl proposal was really cool because it was tiered remuneration. So it said for small holdings, there would be some kind of rate. It wouldn't be as high as the policy rate, something higher than what commercial banks typically pay on checking accounts. And then for larger amounts, there would be step.

35:13
stepwise, so the rate goes down to the point where for large holdings, it would be zero or even negative if you really want to discourage people from holding large amounts of CBDC. So I think that's kind of like what I the elephant in the room, that everyone is fearful of that effect. And I think maybe too fearful because I think you can control it through tiered remuneration, you can have limits and all the CBDC launches.

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pilots and even thinkers, they're all talking about having limits on them. Sometimes it's for controlling illicit activity, but it's also to contain this possibility of people switching too much money into CBDCs. For instance, it'd be a bank run accelerator when the system's under stress. But there was an interest in Bank of Canada paper that kind of, I thought, also made an interesting point that you could actually

36:09
There's there might, might be able to calibrate a rate on a CBDC that it forces, it kind of becomes a floor rate for the banks. And so it would be something below the policy rate and certainly not above that. and then at that point, the, banks in theory, this is a theoretical paper, they would raise their rates to some point that would actually encourage people to have more deposits, which leads to an interest in KPI for that CBDC, the key performance indicator, which

36:39
Normally when we say a CBDC is successful, we look at the amount of outstanding CBDC and compare it to cache and circulation. And when you do that in these three pilots, it's trivial. You'll see that there's only a tiny amount of CBDC outstanding versus cache and other items on the balance sheet. But in this case, could actually, because it becomes kind of like a floor or an outside option, the KPI could not be outstanding. It's just simply that it's

37:08
pushed the banks to be more competitive with their rates and knowing that if they drop the rates too low, people are going to switch into CBTC. Yeah, and it would be an interesting way to force the competition again, right? But that's also exactly the reason why a lot of the central banks don't want that, right? Because a lot of them have financial stability mandates and they don't really want to go in this territory. And if I'm not mistaken, John, think currently there is not a single central bank...

37:35
I understand that it should have more focus, right? But currently there is not a single central bank looking into remuneration for ETC, BTC, isn't it? That's right. Yeah. And they're adamant. Yeah. Because I really liked this. I mean, part of my PhD research was also looking into remuneration and comparing this to a non-interest bearing, all of that, because from a monetary policy perspective, of course, you can also do a lot with the remuneration. My feeling currently is that a lot of central banks don't go down this path due to repud, yeah. I mean,

38:03
Let's say due to reputation of the project in a sense of, look, if you do positive rates, you can also do negative rates, right? And this very easily, you, know, the people that maybe skeptics, the pieces they put together on, you know, kind of a surveillance currency, which also kind of negative interest rates, which has no limits as Bitcoin, right? So all of these criticism that can of course make the

38:28
Yeah, make a lot of noise against that. And my feeling is that it's a political, also a political reason that you don't want to give such people for such claims, you know, enough room. But yeah, this is just my interpretation. Besides financial stability, obviously. Yeah. Even if you're in a negative interest rate environment, which, know, we, some, we, we've forgotten about that now, but we were in, in a, in an environment where rates were zero and in some cases negative. And so that case, all your options are become negative, like in an

38:57
severely negative rate environment the banks would be, they might not frame it as a negative rate, they might frame it as an extra fees, we've got an extra hold-in fee for you to keep your money in our bank. Yeah, it's always the question of how you frame it. Yeah. So if

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I would generally, and in general, please correct me if I'm wrong, conclude your perspective on retail ZVDC. What I just heard, my feeling is that you say

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You're generally open to retail CBDC if it has a good use case, if it's set up properly with an ecosystem. And you think from the projects out there that the digital euro is like at least one of the most promising in a sense of that there could be a use case for that. Did I capture this correctly? That's right. And in the case of any currency union, I think that makes sense. And I think we've also got one other currency union in the CBDC mix, which was the Eastern Caribbean Central Banks, which

39:52
which looks over the Eastern Caribbean currency union. So, you you could imagine maybe there's a case there of all this. It's not maybe not super strong, just because I don't think some of those island countries are so small. I don't even know if they have their own banks and payment systems, but I can see that there might be a use case there and the cost of distributing, cost and risk of distributing cash across those islands is pretty expensive and dangerous. So, and then there's talk also we hear talk about

40:21
several currency unions being explored in Africa, the Eastern and the Western one, which I see occasionally they speak of creating a common currency and then at the same time introducing the CBDC. Although in those cases, the biggest competition I think for retail CBDCs right now is coming from fast payment systems. And all those countries tend to have them and when they talk about how are we going to interoperate

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currencies, a common currency across all of our countries, they usually speak about it in terms of fast payment systems. in terms of like, if success and failure, can't help but look at something like PICS in Brazil, which is a government, central bank sponsored fast payment systems. It went from zero to like three quarters of the people using it in just a couple of years compared to all of these CBDC pilots and

41:20
and proof concepts launches and so on, they all basically fail. And I think there's a little bit of a lesson there, which I think it kind of fits with where the US is going. They're saying it's in most cases better just to let the private sector do its thing. And Bolivia too, the same thing happens there. You let the private sector look after everything. You can put guardrails on it. You can have the central bank giving its blessing. And again, that's where in Bolivia,

41:49
the central bank has a heavy hand in setting standards and running all the infrastructure that allows that QR code, fast payment system to work so well. It's got a really good track record. It's real success story. And I think that's the other, that's kind of the fork in the road. Do you do it all yourself, which is the CVDC, or do you partner with the private sector, the banks and fintechs and let them run it, you know, with

42:18
with rules that you set things like no fees, no fees for most transactions. And you also enforce interoperability. So anybody can pay anybody just like they can with cash. Yeah, and I think that's two really key lessons we can learn from some faster payment system like PIX. Like one is really this interoperability and also acceptance is key. And I think for PIX, it was also kind of demanded for banks to join, for example.

42:46
This means like overnight, or at least whenever the state is, you get a high rate of acceptance, which is also what the ECB has in mind with making it legal tender. And secondly is of course the aspects of user experience, right? Because I remember when I

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was in Brazil and people paid with PIX, it was really super cool and super good, right? And the key question is also for CBDC, like as for any other payment system, will it come up with a similar or maybe even better user experience than existing forms of money, right? Because if you cannot compete on a user experience side,

43:16
you know, I think adoption will really not take case independently on how you adopt or incentivize it. So I think that's also another interesting learning from Pics and Co. on this You mentioned legal tender too, and I think that's an overplayed thing. mean, legal tender doesn't mean what you think, most people think it means. people think that it means that if I owe you some money and I give you a legal tender form of money, you have to accept it. There's just so many exceptions and so little enforcement of that.

43:45
that it's really like cash is legal tender in the US, but enforcement varies and there's lots of exceptions. And I think some cities have sort of laid down the law, but even there, I don't think they're enforcing it. So I think that's why the definition I gave of the BIS definition of retail CBDC did not have the word legal tender. And I mean, there's an IMF paper that's really good that kind of goes through all the nuances of this whole legal tender thing. And they say that,

44:14
Well, for one thing, to make any kind of digital means a payment legal tender, that's impossible to enforce that because there's always gonna be some people who don't have the devices that they need or, you know, unless the central bank rolls out every form factor under the sun, which would be enormously expensive and even probably not successful. can't say that it's really legal tender. Yeah, it's an important topic and important dimension that's...

44:43
This will not automatically drive adoption, but I mean the integration interoperability together with legal tender status, right? And compelling use case, I think that could then drive that. But maybe John, let's after retail CBDC, let's now come back a little to wholesale and CBDC because I mean, you mentioned this in the beginning that there are a lot of benefits that could potentially come from wholesale CBDC. We discussed atomic settlement.

45:08
DVP use cases around settling digital securities, maybe also PVP when it comes to cross border payments. So what's the general perspective then holds the CBDC? you know, you like more bullish than retail CBDC or how would you describe your feeling? Yeah, I'm quite bullish for the reasons you just gave, but the other new development is this role in operating these tokenized deposit efforts. And we're seeing that play out in South Korea. It actually gives, I like to categorize things and I find it...

45:36
It's become really kind of frustrating because for instance, what's happening in Korea, it sort of sounds like they're doing a retail CBDC, but they're not. The central bank is using the wholesale CBDC as the transfer plumbing basically for tokenized deposit experiments. I think when you read like the BIS documents on how their unified ledger would work, there's a whole bunch of different permutations and combinations out there of building these systems that

46:05
you know, probably best run on a distributed ledger technology platform, because you want everything on the same ledger. I mean, that's what makes that Swiss National Bank operation work so well, because the wholesale central bank digital currency operates on

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the same network or blockchain as all the securities, and that's key. that's where the BIS is picked up on this term, unified ledger, where everything under the sun is under the same

46:35
That's the ideal and for specially systemically important transactions, they're best done with central bank money so that therefore you got wholesale CBDC. And of course, a massive term deposit, I'm sorry, tokenized deposit system is pretty systemic. So that requires wholesale CBDC or whatever you want to call it, central bank money, you require that. So I think.

47:02
You're going to see more of those. There's also, think, Project Agora, which is being run by the BIS's investigating the practicalities of tokenized deposits, which are also reliant on wholesale CBDC for that transfer structure. So another use case that you were mentioning, John, is basically for all CBDC to be kind of the settlement asset or means of settlement for tokenized deposits.

47:27
I think it was very, very important what you just said is that also for whole-size CBRES in the end, you have the ultimate efficiency when it's based on the same ledger, right? So this is why the BIS kind of pushes the unified ledger. Also the ECB talked, I think like also some, like a European ledger, I'm not 100 % how they called it, at least for their long-term solution. What I'm always wondering is how much of the benefit you still have if you have a permissioned...

47:51
Europe or unified ledger, right? Because current host CBDC project are all on permission setups and not permissionless DLT. And my perspective to date is that a lot of the permissioned DLT projects in the last few years, they really failed or were canceled. And a lot of stuff is happening in a permissionless one. So yeah, I think, you know, I think you always need at least

48:13
another bridge, know is then inefficiency, but another bridge to the permissionless world, because I think this is where most of the innovation will happen in the next decade and not the permissioned setup. Would you agree or do you see it differently? No, I agree completely. And I think sometimes that comes from like a kind of a blinker view from the central banks, which they sort of see the centralization and decentralization is kind of a very binary sort of thing. Whereas when I look at C...

48:42
any kind of CBDC think piece, it's always talks, and I've been, I have my name on some of these papers that say this, that of course a CBDC should be based on a permissioned, private permission network, of course. Well, no, really it should be more nuanced than that because if you look at the architecture of a CBDC platform, there's many layers to it. So you can have a wholesale CBDC where the central bank or CBDC where the central bank

49:10
and centrally controls issuance and all the first layer. But when you're talking about transactions and validation of transactions and on, there's no reason why it can't be done on a public permissionless ledger, that's my view. And I think there's advantages to running on the public permissionless ledger. I mean, it's not my to-do list actually, I'm trying to encourage, because I do a lot of work with the IMF, I'm trying to encourage them to write a more nuanced paper on this issue. And I think it might happen, there's interest.

49:39
there, which you might see something by the end of this year. That's really good. So please, please push that. Because I was also really surprised when I read the paper also by Ulrich

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Binzalienko author on this topic of permissionless because it read at least from my understanding pretty bullish on this topic. So I always think that if you just focused on permissioned, maybe this addresses a use case for the next few years. But again, the innovation is coming from the permissionless world and you should not forget the world. And it's not all about crypto.

50:08
DeFi web three thingies, right? There's also some, you know, let's say very close to the financial sector use cases based on these permissionless systems. And I really hope that we don't, also in Europe, that we don't miss this ship when we are maybe potentially not enough looking into a permissionless setup or some connection at least. Yeah, my guess is, I mean, I'm not the most technical person in the world, but it seems to me that one of the key features that you get with

50:37
with permissionless networks is better composability, I think, because it's kind of like, I always think of these systems like Lego bricks, know, and when you're in a permissioned private network, it's like you've got a whole bunch of Lego bricks that are all glued together. And whereas with, when you're in a permissionless world, it's more like you've got flexibility, you can plug and play different things. So I'm hoping that's kind of the conclusion that will come out of that IMF work. We'll see.

51:06
And I really like this Lego analogy because it's also often how I phrase it. And also I remember some great papers by Fabian Scherr, who's I think always one of the best authors when it comes to objectively stating also the benefits from permissionless infrastructure. He also made this modularity, composability as some of the most important benefits on this. So yeah, I'm really looking forward and I hope you can push this, John, to have this IMF paper. I'm really happy to read that.

51:35
Yeah, because in my previous life, I always like to say my whole career has been devoted to innovative finance. So before 2012 or so, my main focus was on derivative markets and securitization. And there was this paper that came out in the middle of that called the Lego Approach to Finance, which was, thought, a really cool analogy. And that's basically everything you do in finance can be decomposed. And I think the question is with, and what we're talking about now is that, can that decomposition be

52:03
reversed easily. That's the beauty of composability. You can switch and swap things, or is it going to be all glued together? And I think most innovations we've seen have come from some kind of decomposition of processes. And one of the things I remember, this is, you know, the term structure theory always kind of shows that, you know, it shows basically that a coupon pan bond can be seen as a whole bunch of individual zero coupon bonds. That's great.

52:30
in theory, no one actually, a long time ago, no one actually issued zero coupon bonds. So then one day someone said, hey, wait a minute, we can decompose a treasury security into single payment things. So you have a 10 year, the 10 year coupon becomes a 10 year zero coupon bond. And that decomposition was really cool and a lot of interest in, it relied a lot on legal tricks to make that happen initially. So I think we're in that same world here where you want to have a

52:58
world where everything can be decomposed into smaller pieces and then reconstructed in creative ways. Definitely. And that's also the vision I see for a financial sector of the future to have both asset and the money side decompose and officially interact with each other

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across borders. So that's at least the hope or the vision I see for the future payment space, let's say. One thing I just want to bring up too, we talk about tokenized deposits, I'm a definitions guy almost. And one thing I like to get straight is there's

53:28
there's tokenized deposits and there's tokens, right? I think we've had that discussion before. And the tokenized deposit is the vision, I think, of the kind of traditional thinkers in this area, the BIS. I think when they talk about a unified ledger, they're definitely talking about tokenized deposit, which does in fact require this plumbing, might be wholesale, CBD, C or whatever, that enables me to, when I pay you a deposit token,

53:58
that's from bank A and you are with bank B, the reason you need all this complex infrastructure even then is that once you got my token drawn on bank A, you need to get into your bank B. And so you need this nasty infrastructure to make that happen. But if it's a deposit token, it would float. I always give the example, tokenized deposit is like a check. So I write a check to you and then all kinds of things have to happen.

54:27
Yeah, I bet a deposit token's more like a cashier's check and it basically just, it's drawn on my account and it's guaranteed by the bank, but it can float around, like I can pass it to you and then you can pass it to somebody else. So I'm kind of keen that we don't forget that we should be exploring deposit tokens as well as tokenized deposits. And I think it's for that same reason, like I can imagine with a tokenized deposit that it can be as composable as a deposit token would be.

54:57
Yeah. And I mean, we also do see very interesting news in this field right now with, JP Morgan and their JP MZ, right? Where they basically issue and deposits in a permissionless infrastructure, which I think is the first of its kind, right? So that's also then very important for, for the definition of the deposit tokens and tokenized deposits. And they're careful to call it deposit token too. So that's, I was pleased to see that. Okay.

55:21
there. Okay, that's good to stick to the definitions out there. Maybe as a last question, John, before we ramp up because really time flies, we're already speaking for one hour. If we can look a little bit in the future, like let's say maybe 10 years from now, so 2035 in a sense, what do you think how will the digital money space look like?

55:40
you know, how will retail, HOSA, CBDC work together, tokenized deposits, stablecoins, maybe cash. So of course, a very, very question, you know, a very, very difficult question to answer, but what's your, what's your feeling on how this will be in 10 years? And maybe we can then sync again in 10 years into another podcast to see how we, how we went. Yeah, I'm personally quite keen on the idea of stablecoins becoming the dominant, dominant means of payment. cause you

56:06
Tokenized deposit, deposit tokens, you're still in that bank centric world. I kind of like the idea of stable coins, but I'm very keen, we call them synthetic CBDC. I'm hoping that's where we end up that stable coin issuers reveal to maintain their reserves at the central bank. And which means that they've got the highest quality collateral underlying that stable coin. And it's also, you know, it's, it, can, they can liquidate it anytime.

56:36
there's no market they have to go to sell securities. Because even a three month treasure bill, if that's what you hold or term deposit or something like that, they're not liquid. They're not as liquid as central bank reserves would be. But then in conjunction with that,

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we hear a lot of talk about the we're moving towards the so-called wildcat banking world. Let's give the example of the in US where states, there was a state regulation system. So the banks

57:03
banks that were operating under different rules in different states and the whole system eventually broke down. And I think we talk a lot about the singleness of money. That's one of the defining characteristics that the BIS looks for in money. And they will say that stable coins lack the singleness of money qualities of a bank deposit. Well, that's only by construction, right? Because if the central banks were to say that we will support

57:31
those stable coins and a well regulated stable coins, just like we support well regulated banks, you can have that singleness of money there too. So the central banks would stand by to, for instance, even buy stable coins at par from any regulated issuer. So that's kind of the world I'm hoping that we end up with stable coins that are backed by central bank money that also adhere to the singleness of money principle. That's my hope.

58:01
And maybe we'll get there. I mean, we're inching our way there, maybe, but it's a big leap, I think, for many central banks to basically allow for that. Because there would definitely be potential impacts on the banking sector, And that's exactly also, I asked this question to Ulrich Binzai when I was speaking to him, you know, so if we could see this short term and I mean, the response was in Europe, definitely not short term, maybe mid long term, because as you said, you know, there are some...

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I would say political reasons why currently central banks are not opening up their balance sheets for stablecoin issuers. But I agree with you. I I hope to be honest that this would change because that's also makes a stablecoin like way more attractive also level playing field and also leverages.

58:45
the benefits of permissionless infrastructures then. So central bank or a token backed by central bank money on a permissionless infrastructure. That sounds to me at least pretty exciting. I think the other thing would maybe needed to make that happen will be we'll have to rethink of the whole financial system. right now it's all based on credit granting is all based on this fractional deposit system, which is that the other part, the elasticity is another criteria that BIS puts in front of us to say that stable coins are not elastic.

59:13
they don't have that ability to, sometimes they recklessly, a lot of banks are recklessly, they increase their balance sheet. So they, I think that we have to find, I think we'll have to find another way of creating credit without fractionalized banking. And I'm sure Creative Mind is going to come up with something in the next 10 years. And that's really fruitful thought for the end of the episode. think, John, we need to do another episode to also disentangle that because that of course would be a massive.

59:43
shift and paradigm change, let's say in paradigm shift in the monetary system. So John, thanks so much for being here with us. It was a real true pleasure that we have had you here. again, always inspiring to talk to you and always learned learned a lot. mean, when people want to follow you on your work, where can they do that? I mean, we definitely link your link to your newsletter and to your daily right where you are pretty pretty famous. And I can again, recommend this to everybody. But is there anything more you would like to share? Well, first of all, I'd to thank you for the opportunity to

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to have this fascinating discussion. It's always fun when we get together and I enjoyed this a lot and I'm looking forward to more conversations like this. But in terms of where to find me, mean, Kifmeister is the name I go by K-I-F-M-E-I-S-D-E-R. And so I'm really easy to find if you just Google me or whatever, but my handle on Twitter is or X is at Kifmeister. But if you send an email to johnatkifmeister.com,

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Um, and you want to get on the mailing list for my dailies? Go ahead. Please send me a message. And definitely a shout out that people should, should do that. So please do. link all of this in the show notes. And of course, also dear, uh, dear listeners, thanks for joining and making this episode to the end. Hope you really liked it. If you liked this episode, also the podcast, please share it with your friends, your family, your colleagues, whoever you are, whoever interested in the topic of digital money. Um, in this regard, please also.

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provide us with a review of the podcast, subscribe to our channels. We have a community telegram group, for example, which you can easily join as well. So if you are interested in that, please do so. And otherwise, I wish you a great rest of the day and hope you follow our next episode. Thanks, John, again. Thank you.

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