Adam: **00:01:48** Man, we should have a trigger warning for that for Jeff, I think. Inflation spiraling out of control while we're collapsing. Jeff's triggered for sure. Before we get started, just to let everyone know that this is for entertainment purposes only, and nothing that we say on today's broadcast should be in any way construed as advice. And with that, I want to welcome our special guests today, Jeff Snider and Emil Kalinowski. And of course my distinguished co-host, Richard Laterman. Welcome, gentlemen. And happy Friday. Thanks for joining us.

Richard: **00:02:30** Happy Friday, boys. Thanks for coming. Happy to have you.

Jeff: **00:02:34** Oh, we're great. We're happy to be here. Like as we were talking off air, we're not sure what we're going to talk about today. So, it might just be a boring broadcast where we just kind of just shoot the breeze a little bit.

Adam: **00:02:45** Yeah, we were concerned that maybe there wasn't enough sort of macroeconomic events happening, or there's just no confusion at all, or uncertainty in markets for us to explore. So, could be a really short broadcast. All irony aside, maybe Jeff and Emil, can you just briefly give us a little background? And why you might have something intelligent to say on some of these macro themes that we're going to explore today?

Backgrounder

Jeff: **00:03:18** Do you want to start Emil? You want me to go?

Emil: **00:03:22** You go, Jeff.

Jeff: **00:03:23** Okay. We have a very unique perspective of markets, the macro economy that is grounded in what we believe is rational and reasoned monetary scholarship that has been kind of set aside by the mainstream for, surprisingly, many, many, many decades. We've picked up the ball looking into how the system, the global system, global reserve currency system actually works, how it links to the global marketplace, what role it plays in markets. It's not just macro versus finance. There's this really key -- it's not really monetary niche, it's really, the tentacles of the global reserve currency kind of fit into every little corner around the world. Marketplaces, economy, social conditions, politics, it all kind of fits into that box. So, we spent a lot of time doing research, looking into the relevant indicators and trying to make what we hope are reasonable -- can draw reasonable conclusions about conditions as of today, based on what we see in those places.

Adam: **00:04:31** Jeff, what do you do as a day job, just to sort of close the loop there?

Jeff: **00:04:35** I'm an investment advisor in Florida. I work for Alhambra Investments where I do the research there as I said trying to pull apart these monetary details and fit

the macro picture, market picture into them and see where we're -- what's risk, what's not risk, what's actually going on, trying to tease what's really happening, get behind the mainstream sort of narratives that get propelled all over the place and try to get into the details of what we think is really happening.

Adam: **00:05:07** Fantastic. Emil?

Emil: **00:05:10** Adam, great to see you again.

Adam: **00:05:13** You too. It's been so much time, it's been at least 12 hours.

Emil: **00:05:16** For the audience, they probably don't care, we're going to get right into the meat of the macro economics. But miracle of miracles, there's a lane line, there's two of us in it, Adam and I, what are the chances that there is two people with macroeconomic YouTube shows swimming in the same lane line? So, that's how I know Adam.

Richard: **00:05:37** And this is not metaphor, metaphorically speaking, right? You're actually swimming in the same lane lines?

Emil: **00:05:41** Capital market liquidity and actual swimming.

Richard: **00:05:45** Swimming pool liquidity, or actually ocean liquidity in that sense.

Emil: **00:05:49** Sometimes as well.

Richard: **00:05:52** Give us your background.

Adam: **00:05:53** You do other things besides swim, though, with me, right?

Emil: **00:05:56** Oh. Well, I work in the precious metals industry. And it is my job to write about the metals that we are invested in, directly and then exposed to indirectly. And at first, I believe that it had something to do with supply and demand. And then I realized that the pricing of these metals has more to do with liquidity, and therefore capital markets. And that journey eventually led me to Jeff's work, sometime around 2015. And I read the first paragraph, and I said, it's too hard. And then, Jeff, you remember, things went pear-shaped in China in 2016. And I knew something was wrong again. And I said to myself, I'm going to read this man's work for one month straight, because I know there's something here.

And eventually -- and I didn't get it, of course. But after a month of reading his daily, multiple blog posts output, it started to sink in. Then I ran into, I invited Jeff down to the Cayman Islands to speak at the CFA Conference a couple of years, and then yada, yada, yada. Now we're doing a YouTube show on a weekly basis. It's also a podcast where we talk about macroeconomics from the perspective of where does real liquidity come from in the system? Or more

importantly, why is it not coming? Why is it not available? And how does that explain the last 15 years?

Richard: **00:07:25** And you're obviously referring to Eurodollar University, which is the podcast that you guys co-host. So, to jump right in, Jeff -- Adam, I think you're muted.

Adam: **00:07:39** Sorry, I just wanted to -- yeah, Emil, your audio is cutting in and out. So, I don't know if maybe your microphone is not pointed the right direction, or whatever. But let's get that straight so that everyone can pick up on all the amazing insights you're going to drop today.

Richard: **00:07:56** Yeah, good call.

Adam: **00:07:57** Richard, go for it.

The History of Plumbing

Richard: **00:07:58** Yeah. Jeff, I've been following your work for some time. And before we jump into where we are today, I think would it be helpful for all of us, if you could give us in -- as long as you want to take, sort of the history and the arc of how the plumbing of the system got to its current format, right. We went from a gold standard to a US dollar reserve currency standard. But I'm sure there's a lot of meat in between those two major events. So, if you can give us a little bit of that historical arc, in order to situate us.

Jeff: **00:08:33** Well, as Emil knows, I'm going to make you regret what you just said, because you said the magic words, take as long as you want, take as long as you need, because I can go on for a very, very long time here. So, you might regret what you say, the door that you just opened. No, I'll try to keep it brief just the overview here. And it really depends on where you want to start, because the Eurodollar story, we don't really know where it came from. Essentially, there came to be a pile of dollars on trade in Europe that spread across the world sometime in the middle 1950s throughout the 1960s into the 1970s, that in, very briefly and oversimplifying, essentially solved what Robert Triffin called his *Paradox*, which was the breakdown in Bretton Woods.

The flaw, the inherent flaw in Bretton Woods, which was, national gold reserves was an inappropriate way to tie international reserve currencies together, which I mean, it made sense coming out of the Great Depression where there was still some lingering attachment to gold. But the truth of the matter was, in this international globalizing world of the post war era, the 1950s and 1960s, there would always be this natural tension where the US dollar tied to US gold reserves was never going to supply enough currency so that we could have a sustainable globalization and growth paradigm. And because of that, there was always this natural tension, *Triffin's Paradox* where the French started redeeming US

currency for gold as the dollar started moving around the rest of the world. And it came relatively quickly, within 16 years, the Bretton Woods system began to break down and the Eurodollar system began to take over the roles of reserve currencies.

And as it did, so it kind of married together technological innovation, communications and telecom. And in particular, instantaneous settlement across vast distances with banking evolution, accounting evolution, so that when we talk about the Eurodollar itself, there is no Eurodollar. There is no dollars here. It's essentially a virtual currency system, a ledger money system that is maintained. It's a decentralized ledger money system that's maintained by these global banks that participate in it, that are able to talk to each other at the speed of light and settle monetary transactions. So long as everybody keeps track of who owes what to where, it works really well. And that was the way in which that the Eurodollar system solves Triffin's Paradox. But that then created enormous problems for regulatory authorities, central banks around the world, because banks, these global banks participating in this global network, were doing all sorts of things that nobody had ever conceived of before.

We talked about currency swaps, floating interest rate notes, a whole bunch of derivative contracts, repo, collateral, collateral swaps, all bunch of stuff that central bankers weren't really keeping on top of, regulators couldn't keep track of. So that when we got through the 1970s, into the 1980s, central bankers just kind of threw up their hands and said, we don't know how to even define money anymore. So, we can't do money as like a central bank is supposed to do. And that really represented a departure from what I think most people think of when they think of money, what they think of the role of central banks are, when the actual monetary system is something very, very different.

It says offshore, virtual ledger money system. It's called and denominated the US dollar, but it's really not. Which is why Emil and I insist on using the term Eurodollar because that at least refers to the system that's outside the United States. Even though it's called the US dollar denomination, they're trading supposedly US dollars, there's no real currency there. It's again, it's a virtual ledger money system.

Richard: **00:12:26** That's useful. And I wonder if you might then bring it back to what happens onshore in the US, and I guess the repo market being maybe the mean avenue of the onshore plumbing system. And how those two things correlate, right? The Euro dollar system is outside of the Fed's purview, and I mean, in law, but the fact is though it is quite impacted by the Fed's action. So, can you tie those two things together and maybe reflect a little bit on how it happens onshore?

Jeff: **00:13:01** There isn't really a distinction between offshore and onshore. It isn't like there's a domestic dollar and then there's offshore Eurodollar. They're very much linked

together. So, it's really in some ways, well, before 2007, it operated as a seamless whole, because banks operating in it had various ways to input into the US economy or the global economy or wherever they're going, whatever they're doing at any particular time, whether it's merchandise, trade, financing, whether it's financial flows, hot money, portfolio flows, whatever. You know, you could have a bank in the Cayman Islands borrowing in the US dollar repo market in Singapore, and then lending those funds to a bank in Illinois, for example.

So, it was essentially an integrated, seamless whole that operated all sorts of -- all around the world, where because the vast majority of it operated outside the US it really didn't leave a whole lot of space for the Federal Reserve or any central bank, other than maybe sentimental impacts. Because again, if you go back into the 1970s, where the central bankers threw up their hands and said, we can't even define money anymore, how would the Fed actually operate in that situation? And the answer is, surprising to most people, the Federal Reserve, they do only bank reserves. Bank reserves are not a form of money. They do interest rate targeting. Interest rate targeting is a form of psychology. And over the 80s, 90s and early 2000s, what did the Fed do? They didn't even do bank reserves. Bank reserves were a tiny, tiny fraction of what was taking place across the entire system.

Instead, they did interest rate targeting, which was sold to the public as a means of making predictable movements in the economy through means nobody really knows. I mean, how does an interest rate targeting work? If Alan Greenspan lowers the federal funds rate, for example, which is basically all the Fed did during this period, how does that actually create a stimulus in the real economy? Nobody ever really stops and thinks about that, because you're not really supposed to. We're supposed to believe that the Fed is this all powerful institution, when in reality, the monetary part of it is all in this offshore system that is -- it's not just offshore. It's everywhere, because that's what a reserve currency system actually is. It requires this currency capacity to be available in as many places as possible, so that it can operate like a single global reserve currency. But again, that leaves very little room for the Fed outside of its psychological manipulation.

Interactions

Adam: **00:15:33** So, how do bank reserves interact with the Eurodollar system? And I think a related question is, are all Eurodollars de facto? Do they all de facto arise from bank credit creation, or do they arise from a variety of different other channels?

Jeff: **00:15:57** As Milton Friedman said in 1969, "it's the stroke of a bookkeepers pen". So, yes, banks create the dollars and it doesn't have to be an American bank. It can be any bank, so long as it's part of the club, so long as it's part of the Eurodollar

cartel. As long as it goes along with the internal restrictions and constraints that the banking club has set for each other, they're able to manage their balance sheets as they see fit. So, if the bank wants to grow, that's perfectly fine. And if it wants to create dollars while doing so that's what happens.

So, the role of bank reserves is nominal at best, and bank reserves don't go outside the United States, which is why the Fed when we get to 2007 and 2008 and again, in 2020, also 2011, had to create these overseas dollar swaps to try to sort of jam reserves into overseas places, because as the Eurodollar system broke down. It left these banks outside the United States short of US dollar funding, which they couldn't get from the Fed, because the Fed only operates to the US boundary and not outside. Which left, of course, the Fed to scramble to try to come up with different ways to jamb bank reserves into foreign places, which, it didn't go that well. Because, again, there really isn't a very big place for bank reserves as part of the liquidity in the Eurodollar System. And there's a number of reasons for that.

Emil: **00:17:18** How is my audio?

Adam: **00:17:22** You're loud, but it's clear.

Emil: **00:17:26** How about now?

Richard: **00:17:27** Much clearer.

Adam: **00:17:28** Yeah.

Emil: **00:17:29** I just wanted to jump in and make clear to the audience because Jeff, you said that the banks create dollars. I just want to re-underline the point, they're not actually committing a felony, and counterfeiting real dollars. Really, it's, they're creating promises, on their ledger balance that they can get you dollars, physical dollars, I guess, if you want them. But nobody does at that huge, gigantic level, right, at that wholesale value. Who wants to take delivery of pallet-fulls of dollars? So, these are promises that the banks say that you believe, because they have independent third party auditors, lawyers and so forth, and everyone, and they're part of the club, that they can do it if you want to, but you don't. And that's how they get away with creating dollars out of thin air from the bookkeepers pen, that's not illegal. They're creating promises, which are …

Adam: **00:18:27** Which is why Jeff, you described the Eurodollar system as a global ledger system, as opposed to, for the most part, a global monetary system, because for the most part, there's no actual money exchanged. It's just debits and credits transferring between different bank balance sheets, effectively.

Richard: **00:18:47**

It's not *high-powered money*, right? In essence, it's not the actual ballast of the system, the actual dollars. It's just basically liabilities that are being added to their balance sheet as they lend out those dollars, right? So, those dollars are only --they only come into existence in the form of loans.

Jeff: **00:19:06**

Largely, yeah. And it could be interbank loans too. But I think that's a great point that you just made, Richard, which is *high powered money*, that term that Milton Friedman coined a long time ago. What the Eurodollar system did was essentially take the next step in evolution, which was to eliminate the high-powered money entirely and just go off the ledger. When you step back and look at the Eurodollar system, it's really nothing more than fractional reserve lending. Which is where banks create credit off of claims on high-powered money, as Emil just said. Well, nobody really wants high-powered money anymore. So, now we just have claims on high-powered money that nobody wants. So, the money itself are those claims.

It's almost like the … in the 1920s had won the argument where they said just any token will do as long as we all accept the tokens, as long as we all accept the verdict from these banks keeping track on the ledger, then these claims on high-powered money without any high-powered money, actually becomes the money itself. And that's I think part of the misunderstanding that most of the public has. Emil, we just talked about this recently. In the 1930s when FDR and his administration confiscated gold, using *6102*, everybody thinks that was the government establishing a firm monopoly on money, because what we're led to believe is that we lost the ability to use commodity money, which is separate outside of the banking system, so that the only money we would have left to use would be Federal Reserve notes, physical cash. But even by the 1930s, hand to hand cash and hand to hand currency had already gone out of favor.

I mean, most people, especially for large commercial transactions were already using cheques. So, the US economy and the world economy, in general, had already moved to a ledger money system, a fractional reserve system where there isn't a lot of high-powered money being transferred back and forth, long before we even got to the 1930s. And with *6102*, the restriction of commodity money inside the United States, that essentially freed the banking system to pursue this lack of high-powered money/ ledger money/liability system, which is exactly what they did. And then you marry that with the 1950s *Triffin's Paradox*, this globalization wave, telecommunication. And just the Eurodollar, banks took it another step forward, where it's a complete virtual system, no high-powered money as Emil said, there are no pallets of cash.

And banks really, in the Eurodollar system, aren't really doing what they had -- anything different than they had done before. They just brought it into this international format, and then experimented with all these different

transactions, these different ways to, as you're pointing to Adam, they're not exchanging cash flow, or they're not exchanging cash, they're exchanging future cash flows, for example. That's really what swaps are. So, it becomes this really ephemeral, esoteric system where when you get past high-powered money, no longer need reserves, this reserve-less system is basically a blank canvas for banks to experiment.

Which gets back to the original point that we're making here is that when banks are allowed to experiment in all these various transactions, and they don't include central banks, in that experimentation, central banks are kind of left by the wayside. And that's what really happened in 2007, is you had this complete separate evolution that had been ongoing for decades, perfected in some ways, and then it got out of control throughout the 90s and 2000s. As we know, housing bubble, corporate credit around the world. And then when it started to fall apart, when it started to implode, there was just no way to stop it at that point.

Adam: **00:22:43** I think it's useful to maybe provide an example. This would certainly help me to sort through some of the details here. I remember back in the mid-naughts that many European banks were underwriting mortgages in foreign currencies. Like lots of mortgages underwritten in francs, in euros and in dollars for -- in countries that were not using those currencies as their dominant currency. Right? So, I was curious, like, how does a small European bank which presumably has almost no US dollar deposits, underwrite US dollar mortgages? And presumably, the answer is because they're able to create this liability on their balance sheet and use derivatives with other banks that are members of this club to swap out their dollar risk, right?

So, they're issuing dollar credit, they're swapping out their dollar risk ostensibly through derivatives. So, they've got another counterparty that they're facing, their dollar liabilities. Several, right. And when markets operate normally, those swap, those private swap lines provide sufficient equilibrium to the Eurodollar system between banks. What happened in 2007 that severed that private system and required the Fed to intervene the way they did?

Jeff: **00:24:29** Well, let's take a really simple example. Let's take a bank in Germany, just any bank, one of the any number of German banks that people maybe noticed that were being nationalized in 2008. And wondering how a US subprime mortgage crisis would lead to small banks or regional banks in Germany being nationalized by the German government? The answer is as long as these banks had balance sheet capacity to take on some kind of credit, they could extend that balance sheet capacity through US -- these Eurodollar money dealers to any part of the rest of the world. Because remember, the Eurodollar is a global reserve currency. Therefore, it offers a menu of options. You want to invest because you

think the risk adjusted returns are good in Asia, let's swap into dollars and then let's go into Asia.

And so what happened was largely, so these dealer banks would create these mortgage assets in, say, the United States, because let's stick with subprime mortgages, because that's a good place to start. So, the dealer banks would contact and contract with wholesalers, who would create this pool of mortgages, which then the dealers would securitize into saleable securities, so that you would have essentially mortgage bonds that we're somewhat liquid. So, then you could contract -- the dealer then would sell or sell the rights or sell the bond itself or fund the bond on behalf of the German bank.

So, the German bank would own title on the mortgage bond, but would actually fund the portfolio of securities through the repo market. Either by pledging that mortgage bond in repo, or by transforming that mortgage bond and the collateral for a collateral swap, which was kind of common back then too, which meant that if you wanted to do the collateral for collateral swap, which means you have kind of a crappy junky mortgage bond that doesn't get the most favorable terms, maybe a high haircut, dealers kind of look funny at it, and they don't want to lend necessarily, because it's kind of a crappy junk bond.

Well, you just go to AIG's FP division, and borrow a US treasury that AIP has borrowed from its insurance company portfolio, which has tons of treasuries just laying around in these portfolios. You pay AIG a small spread, you borrow that treasury, you post the treasury in the repo market to borrow the necessary funds that then is funding this crappy mortgage bond. And so you have this multi-leg transaction that spans all sorts of boundaries; physical boundaries, financial boundaries, regulatory boundaries, because you got treasuries that have been replaced and reused and re borrowed several times from a regulated insurance company to suddenly being used in repo in some small bank in Germany. And there's US dollar funding involved in the repo market, that's global. It could be tri-party repo, it could be bilateral bespoke, it could be any number of things. But the point of the matter is, the Eurodollar system had evolved that if you were just a regional bank in Germany, and you wanted to participate in something that you thought looked good, there was an easy way to do -- or what seemed like an easy and dependable way to do it.

So, we fast forward to 2007, August 9th 2007, to be specific, and suddenly, some questions about liquidity in these mortgage bonds, which you've taken this mortgage bond that this dealer has sold you, you're not posting it as collateral in the repo market, but you are posting it as collateral for that swap to the US treasury that you borrowed from AIG. Now, AIG says, I don't really like this mortgage bond that you're using as collateral to borrow my treasury. I need you to put up a little bit more collateral of the same kind, or I'm not going to do this

swap with you anymore. And once AIG says, I need more collateral, you don't really have any, because you're leveraged to the max. What do you do at that point?

Well, you either have to find a treasury that you can borrow from somewhere else, and the price on treasuries, the price on borrowing treasuries is going up and up and up. Because as you're having problem with your more, your crap mortgage bonds, everybody else is too. So as the price of continuing this sort of jerry-rigged game of funding and credit and balance sheet mechanics, as it starts to go a little bit awry, nobody had the margin to step in and stop it. Because on an individual basis, I don't have a treasury, all I have is this crap mortgage bond.

So, what happens if I lose my ability to swap into treasuries? I'm cut off from repo, at least I'm partially cut off from repo, I can't fund this. I can't go into the unsecured markets anymore after August 9th 2007 and borrow in say federal funds, or in Eurodollar deposits or something like that, because credit risk is, and counterparty risk is rising there. And there's any number -- I mean, derivatives, currency swaps, all these things become sort of self-reinforcing. So, at the core level, you're stuck with an unfunded asset that you have to either find some way to fund as all the rest of the system is breaking down and cutting you off, or you have to start fire sale-ing the assets.

And once you start fire sale-ing the assets that then produces all sorts of knock-on effects, especially in these markets for crap mortgage bonds and other crap securities, where that creates price effects, lack of liquidity, that then spreads all throughout the system, so that everybody who has been pledging these crap mortgage bonds as the basis for these multi-leg transactions, it all falls apart for everybody. And of course, dealers, rather than stepping in like they're supposed to, because they're a part of the system too, they're engaged in all of these activities too. They continue to pull themselves back at the worst possible time so that it just becomes a vicious cycle, a self-reinforcing spiral where nobody has the right amount of collateral, nobody has the right kind of collateral, you can't get the derivative and risk layoffs that you want, and it just sort of falls in on itself.

Richard: **00:30:17** You've touched on a couple of points that I wanted to raise, particularly when it pertains to the choke points of the system. And obviously, we're talking about this periphery system of the Eurodollar. But you're, you've tied it back to repo, and you've mentioned pristine collateral, which is obviously sort of the main avenue through which all this plumbing happens and the flow of capital can occur. We can fast forward a decade after the great financial crisis, right? History doesn't repeat itself, but man always does. And in 2019, we had this October of 2019 repo rate spike, right. And now we're not talking about the Eurodollar periphery, we're actually talking about the core system within the US. I wonder

if you might talk a little bit about how that happened. And what we might expect, given that it doesn't seem like a lot of these issues were addressed. Or maybe they were …

Adam: **00:31:14** I want to get there, for sure. But, Jeff and Emil, we need to go through a little bit more about what the Fed did in 2007-2008, and their policies since then, in order to fully understand what happened in 2019. And maybe we should start in 07-08 and how the Fed reacted to the situation that you just described, specifically in the mortgage markets?

Jeff: **00:31:45** Well, first of all the Fed, I mean, they did what they always do. They went to the central bankers' playbook, which is, again, the modern central bank, not the actual central bankers' playbook. The modern central bankers' playbook says you got to make people happy. You got to make people optimistic. So, the first thing they did was cut interest rates. And you stepped back into the situation I described to you, which is really one among the more vanilla type situations. It actually gets incredibly more complex from there. But even from there, you can understand, how does cutting the federal funds interest rate target help in this situation? It obviously doesn't. So, that didn't work.

The Fed cut its interest rates, starting with actually October 10th, or August 10th of 2007, where they lowered the prime credit, what used to be called *the discount window.* And then they said, okay, that's not working. September of 2007, we'll start cutting the main federal funds target rate. That didn't help. So, we get to December 2007. Now they're starting to think this is really a big thing, and it's not going away. Nothing we're doing is helping. So, they did two things. They did something called the *term auction facility*, which just auctions off bank reserves on an allotted basis, and they did these *overseas dollar swaps*, which is essentially the term auction facility, but in overseas central banks auctioning dollars. The dollar swaps actually referred to swap lines between the Federal Reserve and foreign central banks, because the Fed didn't want any credit risk of any foreign bank counterparty.

But the by and large, as you pointed out earlier, guys, the overseas dollar swaps are nothing more *than let's try to get some bank reserves outside the United States*, which the problem wasn't necessarily bank reserves. There was no shortage of bank reserves because nobody used them. The shortage was mostly in collateral as well as balance sheet capacity, which gets into credit default swaps and derivatives and all sorts of other things. So, the Fed continued to try to step in, in ways that it didn't help by them stepping in. And they've invented new way stuff that had never been done before, like a primary dealer credit facility, which was introduced in the wake of Bear Stearns near failure. Which, and if you look back on a lot of charts, you look back at the history of the global

financial crisis, what you'll see is that Bear Stearns was the, maybe the point of no return.

Now, the Fed thought it was successful. They congratulated themselves for what they thought was going to be the worst of the crisis because they had successfully avoided the worst case, in their minds, for Bear Stearns. Let's have JP Morgan buy it at a cheap rate, everybody's happy. But all the dealers across Wall Street said, yeah, Bear Stearns didn't fail, but all of the management and equity in Bear Stearns got wiped out. So, that essentially punctuated the downside danger for all this Eurodollar stuff that everybody had been taking for granted for decades. Now suddenly, it was very real. I can be Bear Stearns. I need to really cut back on what I'm doing.

As a dealer, me cutting back and de risking my balance sheet means none of this stuff that that used to go on before. You know, the collateral for collateral swaps and transformations, these MBS securitizations, liquidity, backstops, commercial paper markets, all these things started to go belly up, because dealers were cutting back in the wake of the Fed's continued failure. Didn't matter what the Fed did. The primary dealer credit facility was one way of the Fed acknowledging this problem in collateral, shortage of collateral, that didn't really help. Emil and I talked about the Lehman Brothers emails, where the Fed was absolutely convinced this PDCF was going to be great in the -- what was the contact with Vice Chairman Dudley, or I forget who it was, got an email from somebody in Wall Street who said, Lehman Brothers is going to fail no matter what you guys do. And of course, that's exactly what happened.

So, it was -- to not go into every little bit of detail here, but the Fed was aware of how things were failing, but just could not figure out a way to fix it. Because, again, the original sin here was the banking evolution outside the United States, outside the Fed's jurisdiction in all these various forms that aren't really recognizable as traditional money. And the Fed just thought, well, if we have this psychological manipulation game, maybe that'll be enough if things start to go wrong. And as we found out starting August 2007, psychological manipulation doesn't really help when you have a real monetary shortage. So, the Fed continued to try to figure out a way to fix it, but it was sort of like square peg in a round hole.

Adam: **00:36:11** So, the Fed and the authorities have always characterized Lehman as the authorities allowing Lehman to fail. But I think that's a mischaracterization from what I understand, right? They tried their best and used all the tools at their disposal to prevent Lehman from failing. But it was revealed that the emperor had no clothes, and Lehman went under because actually, they have no tools at their disposal that can help to manage a cascading global collateral call in the

Eurodollar market, because they do not have tentacles that extend directly into those markets.

Jeff: **00:36:54** Yeah. And I think people misunderstand what happened there. Bear Stearns too. Lehman, Bear Stearns, AIG, they didn't, they didn't fail or nearly failed because they lacked cash. They lacked collateral. Every single one of them was taken out by JP Morgan, was tri-party repo custodian said, you've got a lot of junk that you're posting as collateral. I don't like this junk. The markets for junk is crap. And if you default on the cash loan, and I have to sell this junk, I don't know what price I'm going to get for it. And if I don't know what price I'm going to get through the collateral, I can't accept it in repo. And it's not just cash repos, derivatives. It's any number of financial transactions that need to be collateralized.

And so JP Morgan knocked on Bear Stearns door and said, I need, I think it was 6 billion in collateral that they knew Bear Stearns didn't have. And when they said collateral, I need treasuries. I don't need more of this junk. I want some treasuries tomorrow, or I'm cutting you off of tri-party repo, which essentially means you're out of business. And that's where Bear Stearns was, *"hey, Fed help me out."* Lehman Brothers was in the same situation. It had borrowed a number of collateral, it had borrowed -- it had used crap collateral all throughout its balance sheet, as everybody else did. It wasn't like they were doing something nobody else was doing. Everybody had done this, because they thought, recency bias, confirmation bias that there was no -- I mean, there's no downside. This is repo, it's the safest thing possible.

So, when JP Morgan said to Lehman, I need, I think, it was 8 billion in collateral tomorrow, that's when the Fed had to step in and do all these other things. AIG was a somewhat different story. But again, same thing because it had been borrowing treasuries from the regulated insurance company, or at least AIG FP had done it, then, when the insurance companies say, I got to have these treasuries back, AIG FP didn't have any more collateral to post. Again, collateral calls came and they don't have anything. So, to prevent the absolute fire sales across all these balance sheets, that's when the Fed tried to step in. That's why the Fed created *Maiden Lane* and took some of the credit default swaps, some of the other assets off of AIG's hands before they really had to sell them because AIG could no longer fund them.

So, we're really, I mean, oversimplifying, but really step back and look at the big picture of 2007-2008. It wasn't really subprime mortgages, so much as it was a collateral shortage that lead to a bank run on collateral. When you really look at what happened, it really looks like a traditional 1930-style bank run, except that it isn't customers converting their deposits into cash. It is lack of collateral and forcing banks to scramble into US Treasuries mostly, T bills in particular, in order

to just continue to liquefy and fund their balance sheet activities and keep all of these complicated transactions alive.

Demystifying the GFC

Richard: **00:39:42** So, what you're really demystifying, I think, what is commonly accepted lore of what happened in 07-08, which was treasuries went up because of a flight to quality. Investors dumped everything and went into treasuries. What you're saying sounds to me like the bid up in treasuries that made them rally so aggressively at the end of 08, was the fact that the actual institutions that run the show, right, the system was running after collateral, and they were chasing all these different durations of treasuries in order to secure their balance sheet and to keep them from having a run on their credit.

Jeff: **00:40:21** Yeah. The simplest way to think about it is this: put yourself in the shoes of a repo counterparty. I have cash on my balance sheet from wherever. It could be a money market fund, it could be any -- it doesn't matter. I have cash on my balance sheet. All I care about is that tomorrow morning, whoever I lend that cash to, they're going to post collateral to me. If they default on that loan, I need to be able to sell that collateral and get back every single penny that I lent. So, your only consideration is, what is the market for that collateral going to look like tomorrow? If that market is kind of shaky, then I'm not really sure that I can sell your asset and get back all my money.

And so what is the biggest, deepest, most sophisticated market in the world? It's US Treasuries. It has nothing to do with the credit worthiness of the US government. It's simply the fact that the US Treasury market is the deepest, most liquid and most dependably liquid and therefore, predictable market in the world. So, you're the repo counterparty, you're lending cash, you're not really sure about crap collateral. You're going to demand US Treasuries, not because you like the US government, but because you know that you can sell it tomorrow. And with all these other markets for crap collateral going wrong, it just narrows the list of acceptable usable collateral down to just US Treasuries, it sort of herds the entire global marketplace into that narrower and narrower and narrower space.

Richard: **00:41:43** Driving treasuries into negative yields even.

Jeff: **00:41:44** Yes, T bills will get negative because as Emil and I talk about all the time, currently, it's still the problem. We still have a collateral scarcity problem, is that you have to look at US Treasuries, T bills, in particular, not as investments, it's not about the interest rates. They're balance sheet tools, they have a utility in these currency and funding markets that goes well beyond investment characteristics. So, banks will own them at an extreme negative carry, because

they need to pay the premium, the liquidity premium to own collateral that's usable in all-weather.

Adam: **00:42:18** But it sounds to me like the Fed intervening by declaring that they're going to buy this collateral, at par, means that they stepped in and said, aside from the fact that treasuries are the most liquid market, we're also going to guarantee their value, because we're going to step in, and we're going to buy a large amount of treasuries directly, not from the secondary market, granted, but from the primary market. So, at least there's an indicative bid on the value of these treasury securities that banks can use to declare the value of the treasuries on their own – of this collateral on their own balance sheets, right? So, indirectly it does seem like those Fed interventions did, or had the potential to kind of make a difference for that reason. Am I misreading that?

Jeff: **00:43:16** Yes.

Adam: **00:42:18** Okay.

Jeff: **00:43:19** Richard Fisher. You want to deal with this one, Emil, Richard Fisher in 2010-2011?

Emil: **00:43:26** Regarding that, they were purchasing assets that the market was running to already. So, these things are in demand.

Jeff: **00:43:34** The Fed wasn't putting a floor under the treasury price. The market was already buying treasuries before the Fed ever started. And it came a point of contention in FOMC discussions, because they're like, we don't really affect the treasury price because the market is buying them during these periods where collateral is scarce. So, we didn't need the Fed to buy them. In fact, the Fed was lamenting the fact that they were buying, I think what Richard Fisher says, "*why are we buying assets the market's already running toward?*" What central banks are supposed to be doing are buying assets that people are running away from, which is not what happened at all.

And again, that wasn't really the purpose of quantitative easing, to begin with. Quantitative easing has three theoretical channels. The first is the psychology sentiment hokum. The second is supposed to be portfolio effects, which is, you're a dealer, I just took a treasury off your balance sheet. Now you got to go find a riskier asset to replace it, otherwise, you're not going to earn as much money. But as we know, from 20-some-odd years of Japanese history in QE, as well as our own experience with QE, and Europe, banks don't do that. You take the treasury from their balance sheet, they replace it with a treasury. So, it becomes this churn into the Federal Reserve's hand where the Fed is neither creating portfolio effects, nor is it influencing bank behavior at all. So, it's not really affecting the real economy or the treasury marketplace.

And the final is the interest rate effect, which as study after study after study has shown, and Emil, you remember the one we just did, meta study, not long ago we just went over, where the buying of US Treasury Securities does not change the interest rate by all that much according to their own academic scholarship. I think the most recent one, which was from a year ago, or a couple of years ago, they said that a $600 billion, I mean, QE2 size of asset purchase program in the US Treasury market, reduces the long run 10-year long run US Treasury rate by, drumroll, 15 basis points. So, none of the three channels for quantitative easing actually leads to easing and it's not really quantitative if you have to do it more than one time. And the reason is, because the Fed is not a central bank in the way people think. We have this other monetary system with its own monetary problems, where the Fed is just doing what the Fed can do, which has nothing to do with the actual monetary system.

But what really happens is post-Paul Volcker and the *Volcker Myth*, what really they're thinking, the theory behind all of this is that the Fed thinks, if I can convince you, or that you believe, anyway, that quantitative easing is money printing, that the level of bank reserves somehow relates to adding high-powered money, then you'll act as if I've just created a wave of money that's going to lead to inflation. And so even though I haven't really created any money, if you think I have, and you start acting like you think inflation is coming, that's really what the Fed is intending to accomplish through QE; to fool people into believing that inflation is a real thing and start acting so that it becomes a self-fulfilling prophecy. And because it doesn't really, the world really doesn't work that way that's why QE never really led to any results. Why the Japanese are on, what is it QE24, QE25? Because you keep doing the same thing over and over and expecting different results.

Adam: **00:46:51** Okay. But Jeff, I mean, clearly, there was -- well, markets, we didn't have a global collateral call. Markets recovered. And the idea that the Fed wanted to succeed by creating the illusion or expectation of inflation is inconsistent with the way that the recovery transpired, I think, right? Well, if you look at the markets, the assets that were most rewarded and most bid by investors over the 10 years subsequent to the Fed's QE1 QE2, etc., that they were disinflationary growth assets. They were almost exclusively US large cap tech, which are the types of assets that perform best when people have no expectation of inflation.

And just in the last few months, as the market has begun to fear that we've had -- we're having an inflation shock and might be persistent, these same assets are the ones that have sold off most aggressively, right? So, I'm not sure that the wealth effect channel has been totally dismissed as ineffective, right for, which I think is the same as sort of, the portfolio channel, right? You force people out the risk spectrum. It pushes risk asset prices up, people feel wealthier, their houses are worth more, the asset side of their balance sheet's worth more,

which means that they have more borrowing capacity, and then they use this borrowing capacity to bolster consumption. And we've seen all of these take place.

Jeff: **00:48:46** No, we didn't. So, you have two separate things here. You had zero portfolio effects, because the banks did not lend. Credit creation actually changed in the absolute, almost 45 degrees straight angle. So, in other words, in 2007 and 2008, the banking channel was dead, the monetary channel was dead. So, you have sentimental effects that didn't come from banks. It didn't come from portfolio effects in the banking system, it came from portfolio managers who were only too happy to buy stocks again, because they thought QE is money printing. I have no idea what bank reserves are, but I'm going to pretend that it's money and so I'm going to buy stocks for my clients.

So, what happened, we have the sentimental impact. They created portfolio effects in a different way. The stock market went up, it wasn't just big cap tech stocks, every stock went up. Every stock evaluation -- all equity valuations went through the roof, and it had no direct impact in the real economy, because as bank lending dried up, so did economic growth. I think that's another misconception that people have is, we still have never recovered from the 2008 great recession. And the reason is because we've been robbed of liquidity from the collateral channel and other things, balance sheet capacity, banks don't extend credit.

So, you have stocks going one way, while the economy doesn't go in the same direction and it leads to all sorts of, not just financial problems, but also social and political problems, because you have very -- you have a picture of divergence that nobody can really explain. The real economy has never -- I mean, the level of lack of economic growth just blows your mind, how bad the economy is. Not just in the US, this is a global problem. We're several trillion dollars short of where real GDP should have been. I'm talking about 2019, before COVID. Several trillion dollars, almost a third short of where we would have been had the great recession actually been a recession. Had the economy recovered and gone back on track, which is what it was supposed to have done, the economy would have been, was it five or six, $7 trillion more than it actually was. That's an enormous number, and it's an enormous number that's been replicated all over the rest of the world.

So, you have this divergence where stocks are doing one thing that the Fed wants them to do, but has nothing to do with actual money being printed, nor does it have anything to do with economic fundamentals.

Richard: **00:51:07** So, point us to some of the variables that you're looking at, I suspect that you're thinking about labor, participation rates and that sort of thing. But I wonder if you might talk about some of the macroeconomic variables that indicate to you

that this great divergence between what would have been the economic recovery that we should have had, and didn't happen.

Jeff: **00:51:27** It doesn't matter. Pick one, any of them, they all show the same thing. Economic growth has gone basically sideways since 2008. And it doesn't matter what country you're looking at either. We can look at China, for example. China had a little bit lengthier in their recovery afterwards. But by 2011-2012, China was trapped in the Eurodollar vortex too. And they're now declining. Economic growth is falling apart there.

You look at US industrial production. Participation rate is a perfect one. The labor force, up until October 2008 had never declined in any post-war recession, because why would it? Why would a labor force actually shrink under temporary contraction, which is what recessions are supposed to be? October 2008, for the first time, the US labor force actually contracts. People left the labor force because they knew there was no jobs left. They knew there was no jobs, and they knew they were not coming back. So, the participation rate since October 2008, is another key metric, which shows the economy never recovered.

You look at things like industrial production. Industrial production has hit new record highs, but not really. It's a couple percent more than it was in 2007. This is 2022, 2022. Fifteen years later, US industry is a few percent more than it was 15 years ago. And you can see the breaking trend. The breaking trend for all of these macroeconomic variables, 2007 and 2008. Despite all the mainstream press about how effective -- how ultra-easy quantitative easing has been, it hasn't had any effect on the real economy whatsoever in any jurisdiction it has been tried. All you need to do is get out whatever macroeconomic variable of your choice and make sure you plot the previous trend against what the current results are going to be. And what you're going to see is the previous trend is way up here, and the current results are we down here.

Adam: **00:53:19** Jeff, I think we're on the same page with that. Honestly, I agree that we haven't -- we've had negligible economic growth, and the economic growth that has taken place has been from sectors that typically don't actually benefit the domestic economy or any domestic economy. They're largely accounting conventions that are sort of masquerade as economic growth. One area though, where I believe we have seen just an obscene amount of lending over the last 10 or 12 years has been against existing collateral, right? So, for example mortgage lending obviously has exploded over the last 10 or 12 years. No? Okay, so …

Jeff: **00:54:09** Not all. I'm telling you, go to the -- it's called the Z1 Series, which used to be called the Flow of Funds but is now called the Financial Statistics for the United States. It's prepared by the Federal Reserve, and essentially puts together call reports that are taken from all the banks that are under their jurisdiction. They

even have a section for the rest of the world too because on a deep level, they know that this is a globally interconnected system. And you can actually put together how much credit the banking system has been issuing. And what you see is exactly like what you see in the real economy. It goes like this up until 2007 and then it's like this.

It doesn't matter if it's mortgages, it doesn't matter if it's corporate credit, it doesn't matter if it's any other form of credit. Credit has changed. It completely changed in 2007 and 2008 because, think about it from the perspective of the monetary system, from the banking system. If you continuously have liquidity risks, you're not going to take a lot of credit risk, because you can't. You can't depend upon the system to make sure -- that keeps you out of the same situation that put Bear Stearns into a tailspin and put Lehman Brothers out of business. You can't put yourself in that situation. You got to make sure that you de-risk at all times. I mean, JP Morgan called it their *fortress balance sheet*, which is the opposite of risk-taking that the system actually needs, and the economy actually needs to grow.

Adam: **00:55:32** Yeah, I guess my only point, which we don't need to sort of continue to kick the tires on was, it seems like there was a contraction in loans for the purpose of investment, and there was an expansion of loans that were, you know, just the fact that you've got loans, an extension of credit to buy an asset, at the margin asset, demand for assets goes up, asset prices go up, which means, now you've got more collateral available to borrow against, and you've got this sort of, I'm going to say virtuous cycle. Of course, it's not virtuous in any real sense, but it's virtual in a mechanical sense, cycle of more borrowing drives higher asset prices, higher asset prices, enables more borrowing, right?

I mean, we've clearly seen a massive rise in margin debt, a mass -- like, as a percent of market cap, margin debt rose to levels that we saw in 2007 and in 2000, you know, coming into the beginning of this year. So, clearly, there was an enormous amount of borrowing against equity and bond collateral in investment accounts, clearly at a massive increase in home prices and a massive, commensurate increase and the mortgages taken out against those homes, right? But what I think your core point is, there wasn't any productive credit creation. All the credit creation was towards malinvestment, and had the direct effect of inflating asset prices through this virtual credit asset cycle.

Jeff: **00:57:10** Now, I think the part that we're missing here and this part that everybody misses and it's easy to miss it, it's understandable why we miss it is, that through these liquidity risks, we have a situation like the 1930s, which is that everybody is funneled into the most liquid, lowest credit risk assets. So, the prices of those things go up. But what we don't see is the fact that mom and pop can't get a loan at any price. And that there are a lot of mom and pops … credit. So, the

prices of the liquid safe assets go through the roof, which we all see, because that's what's on CNBC all day, every day. What we don't see is the interest rates that mom and pop are paying, which is infinity. So, it looks like interest rates are low, but in reality, interest rates aren't really low, for the actual effective economy that is starved of credit. Because a healthy economy is where credit flows to all parts, whether they're risky or not risky. And because of this liquidity risk breakdown in 2007-2008, banks are absolutely unwilling to extend risky credit.

And so vast swathes of the global economy are going without any access to credit, which in nowadays is actually money. So, they're money and credit deprived, and we don't see it. It doesn't show up anywhere. It doesn't show up on any tape, it doesn't show up on any data form, because we don't collect data on what loans don't happen. But we can see the effects of that because number one, we know the economy never recovered. We know banks are not extending credit. And number two, as you just said, Adam, I agree with you, we see the prices of liquid and safe assets go through the roof, because those are the only things that are negotiable in a very low liquidity environment.

Richard: **00:58:49** So, this financialization creates this mirage that makes for good headlines as we've recovered, everything is fine, but the real economy hasn't really recovered.

Jeff: **00:59:00** It's hard to connect the dots, right? Because if you're just a layperson or your head -- you don't spend all your time like Emil and I do, deep in the weeds. How would you know the difference? I mean, there's some simple cues that you can go off of, but really, if you don't see it priced on the internet someplace, you don't see it on CNBC, you don't see it in some kind of data report, you don't really realize that what we're left with is an economy that's being deprived of its vitality from lack of liquidity, especially since the stuff that you do see, kind of makes you think that there's ample liquidity, like the Federal Reserve balance sheet and bank reserve. If all you look at is bank reserves, you think, oh my God, the world's got so many dollars, it's inflationary, it's highly inflationary. You don't see the monetary destruction that took place in the shadows of this credit stuff, this collateral stuff, balance sheet constraints, all these other -- you don't see that stuff and you focus on the stuff you do, you get a view very different picture from reality.

Adam: **01:00:01** So, hold on, Richard, I just want to -- it strikes me that because of the existence of the global Eurodollar system, in fact, the global banking system is one large global bank that is connected via, I think the most recent BIS reading was a little over $700 trillion in global, effectively interest rate swaps, right? I mean, so there's no way to sort of -- a run on the banking system is now a run on the global Eurodollar system, the global collateral system. And so I think that is a

good setup for the question, I think, Richard, you wanted to ask about. So, in the current Eurodollar …

Richard: **01:00:52** But before we get there then, before we get there, Adam. How has a toolkit of central banks or particularly of the Fed, which is the several 100-pound gorillas in the room changed, other than what everyone knows, which is the quantitative easing, the expansion of balance sheets. Have there been any improvements in their toolkit that would -- might have been able to address what happened in 07-08 better?

Jeff: **01:01:16** Well, they have added several tools. I wouldn't say they're effective. They think they're effective. One of them is FIMA, F-I-M-A, which tried to address what happened in March 2020. Which March 2020 should have been another warning sign that these people have no idea what they're doing? And that's a whole other can of worms. But essentially, they have addressed some of the, at least they think they have addressed and they've attempted to address some additional shortfalls; things like repo treasuries off the runs, that kind of stuff. But in my estimation, it's not really anything different than the PDCF 15 years ago, or the overseas dollar swaps that they used that never worked in the first financial crisis.

So, they realize it's not really being effective and they continue to experiment. But as I said before, and I like how you brought up the global derivative situation, because the first thing you should ask with that, why are there 700 trillion in gross notional interest rate swaps out there? What are these things being used for? And the answer is, balance sheet constraints and management. These are banks using these tools to be able to create and manage risks on their balance sheet to create credit, to create balance sheet expansion. And guys, what are you going to see when you look at global derivatives? You're going to see parabolic rise until 2007, and then sideways thereafter. Because if you're not expanding your balance sheet, what do you need more derivatives for?

So, it's another indication that the system has changed over the last 15 years in a categorical way, where banks are not creating money, they're not creating credit. So, they don't need more derivatives. They don't need more of any of these -- they don't need the Fed, they don't need any of these other things. And it's harming all -- it's harming everybody in ways that we maybe don't really appreciate, at least not evidently and openly.

Adam: **01:03:08** Okay, you go ahead, Richard. Yep.

The Repo Market Rate Spike

Richard: **01:03:11** Walking us forward to today and by today, I mean, where I wanted to get at several minutes ago, which was that repo market rate spike in October of 2019.

What was that an evidence of, in your mind? What was the signal that I think went under the radar for a lot of people, and especially after, a few months later, we were drowned with COVID and everything that happened since then. So, I think a lot of what was happening then got sort of swept under the rug, and not a lot of people were able to pay the proper attention to it.

Jeff: **01:03:51** T bills, right, Emil?

Richard: **01:03:55** Lack of T bills, lack of available T bills.

Emil: **01:03:57** But why were they being hoovered up? I wanted to bring that up earlier. Adam was asking a question about the Fed buying treasury bills and putting a floor under them. But then there's a problem with their buying the wrong ones. Right? And that's what we saw in March of 2020, because of what happened in September in 2019, thereafter. But go ahead, Jeff.

Jeff: **01:04:19** The short answer is that there are any number of warning signs that dealers are becoming risk averse and collateral was becoming short. And therefore, dealers had to constrain their own balance sheet activities, which we depend upon these dealers to act in the monetary system. And so when it became, you remember the yield curve inverted late August 2019, which is a very powerful signal that things were going wrong. Dealers becoming risk averse. You saw euro bonds as collateral, collateral swaps, repo fails, any number of indications that told you the system was relatively fragile.

Then you had this point in mid-September 2019, where we had what was essentially called *backwards elasticity*, which as the interest rate rose in the repo market, the cash rate rose for GC collateral in the repo market, that should trigger dealers coming flying in, because they can make their whole year on a fat juicy repo rate on single day. But yet, they looked at that repo rate and said, *that's risk*. And so they step further and further and further back. And the repo market just went under, because of dealer risk aversion, all these liquidity risks, and all these other factors on their balance sheet said, we're not jumping into this repo market at any price. That's backwards elasticity. It had nothing to do with the level of bank reserves because all the banks told the Fed very privately and very quietly, we have ample bank reserves. What they lacked was the willingness and ability to act on their own balance sheets. And for a number of reasons that we've talked about some of them here.

But essentially, risk aversion. If dealers are not willing to do these activities, they break down, and then they create these self-reinforcing cycles. And as Emil was just alluding to, the Federal Reserve acted exactly the opposite way they should have, because you have this collateral shortfall that pre-existed September 2019, causing all sorts of liquidity problems. What does the Fed do? The Fed steps in and takes the best of the best collateral out of the marketplace. They

even called it *not QE,* and intentionally bought treasury bills. And I don't think we specified that before. But treasury bills are the absolute top of the top of the top of the collateral list.

And here you have the Fed buying treasury bills after September of 2019. So, that as Emil and I had warned, all throughout that period, 2019 into 2020, the Fed is doing the worst thing they could possibly do, which is take the best collateral out of circulation. And lo and behold, what happened in March 2020? Yes, it got lost into the shuffle of COVID. Everybody was worried about lock downs and diseases and pandemic and government reactions, and everything else. But in a technical sense, we had another massive collateral shortage where the Fed had removed 342 or 346 billion in treasury bills from the marketplace, because it misunderstood what happened in the September before.

Adam: **01:07:08** So, when they remove these treasury bills from the marketplace, why doesn't -- this is going to -- sort of thinking through this, and I'm not sure how mechanically this might be the case. But seems to me, if you're removing, let's call it a good or a demand instrument from the market that has extremely high demand at the margin, you're driving up the price of those treasury bills and that the price would have to rise enough so that the value of that collateral will meet the demand for that collateral, right. So, I mean, in theory, the Fed can remove all the T bills, and the value of the remaining T bills would effectively go to infinity, because they would be in such demand, right? Is it the fact that they're not infinitely divisible that means that you can't adjust like that? Like, it just -- I don't understand why the supply/demand curve doesn't apply in this case, to remedy that situation?

Jeff: **01:08:14** It does, because it's even more complicated than we've even touched on here. Because there's this whole other ecosystem about collateral that we haven't even scratched the surface of. Because treasury securities or any form of collateral isn't just a one-to-one. It isn't, say I own a treasury bill. And then I let you have it, and you use it in the repo market and then that's fine. I might have a treasury bill or treasury security that I've borrowed from somebody else who borrowed the same security from somebody else, to borrow the same security from somebody else, who borrowed the same security from somebody who borrowed it from somebody else, and somebody else, somebody else.

Richard: **01:08:48** Rehypothecation of collateral.

Jeff: **01:08:50** Of collateral. So, you have supply factors, as well as -- supply factors in the dealer and the monetary system, as well as supply factor from the US Treasury, supply factors from the Federal Reserve taking out collateral. And so the simple answer is, say the Fed removes 300 billion in treasury bills. Then we would just need a little bit more reuse rate in the dealer market to replace them. We'll just lend them out a little bit more. So, the Fed takes 350 billion out of supply, then

dealers step in and reuse and repledge and rehypothecate 350 billion more. They've essentially conjured that whole and made up the -- offset the deficit with their own activities.

But again, what is the secret sauce here? It requires the dealers to want to do that. And so if the Fed is taking treasury bills, and the dealers say, no, I don't want to rehypothecate and reuse because I'm nervous, I'm risk averse, whatever. Then the Fed reduces the supply and the dealer system, the collateral system does not replace it, then you've got a problem. Because usually, if the dealers are becoming risk averse, they don't want to reuse and repledge and rehypothecate the same rate they did before. That usually is when demand for collateral, the demand for the best collateral is going up. So, you have lack of elasticity, and that's really the problem here in these collateral chains.

Adam: **01:10:10** Hence reverse elasticity. Okay. Now I know I've got it. Got it. Okay. So …

Jeff: **01:10:15** And it's -- these are overly simplified examples, it's even more complicated and complex than that.

Creating Virtuous Relationships

Adam: **01:10:25** I'm sure. So, what could have been done in 2007-2008, if let's sort of step away from the Fed, as the only game in town. Were there other potential actors that might have intervened in more productive ways in 2007-2008, and over the last 10 or 12 years, and in March 2020, and potentially today that maybe are in a better position, or have better tools at their disposal, to either provide backing or support for the global Eurodollar banking system? Or who can affect the real economy in ways that may create a virtuous relationship between the real economy and financial assets instead of the destructive relationship that it seems like we've had over the last 12 or 13 years.

Jeff: **01:11:30** The first problem is that nobody knows this. Nobody really understands what the problem was in 2007 and 2008, to begin with. And so just to catch everybody up, and I'm including central bankers in this, to catch everybody up on what actually had happened, what the crisis actually was, was going to take a whole lot of time to begin with. Nobody really had the time to really look at the situation and figure out what was actually going wrong and how to fix it back then. Instead, it was just, let's do a bunch of QE and hope for the best, which, of course, was not an effective solution, as we're living in the consequences now.

But over the last 15 years, you would have thought somebody would have said, okay, we didn't have time in 2009 to really figure this stuff out. But let's start figuring it out and let's use the time wisely. And let's figure out -- let's come up with a solution going forward. No, that's not been done either. Neither governments nor central bankers, nor economists, nor anybody has done

anything other than just say, let's just slap another QE on and see what happens. Even certain central banks and certain regulatory authorities, like those in Europe, for example, they have been talking about repo and collateral, SFTs, Secured Financing Transactions for about a decade -- was it a decade, Emil, where they first came up with the idea that they need to investigate what banks are doing in SFTs. And here, it is in 2022, they're still kind of in the initial stages of figuring that stuff out.

So, they say, we're aware of this collateral shortfall, we know it's really important, but we haven't really done anything about it. And you have to ask yourself why, which is a whole separate topic I don't think we need to get into. Because the real relevant question is, what do we do about it now? And the answer is what Emil and I are trying to do is get people to realize how the system actually works. And realize what happened 15 years ago, just getting everybody caught up to 2008-2009, so that we can then hope to have some prayer of understanding where we are now. And then from there, coming up with a solution. I am personally very optimistic about digital currencies and crypto. Obviously, not their prices today. Because I think most people have bought crypto currencies for the very wrong reason of thinking the Fed has printed too much money, and they're going to destroy the dollar, sorry about your commercial. But that's the reason everybody piled into cryptocurrencies, which was not exactly what happened.

So, they might have prevented this latest crypto winter, digital currency winter had they understood from the Eurodollar system signal that there was no massive overdoing it in terms of printing money and destroying the dollar. But that's not really the optimistic part of digital currencies; is that digital currencies are essentially, at their base level, an attempt to create an alternative medium of exchange for the failing Eurodollar system that is inelastic and inappropriate and doesn't work. So, even if governments don't want to take the opportunity and do the job that they're supposed to do, the private market is already working on solutions. It's just they're a long way down the road.

So, we either have to depend upon cryptocurrencies, finding the right kind of combinations to do all the things the Eurodollar system does, which is actually possible, just not anytime soon, or we have to give some kind of government institution, central bank, whatever, to wake up and actually realize what's going on and then admit it to the public. In one sense, you can understand why J. Powell is not going to go on TV tomorrow and say, *"You know, we don't know how to define money. And we haven't known how to define money since the 1960s. We've been lying to you for half a century."* He's not going to do that. He's never going to do that. And they're never going to do it unless somebody forces them to do it, which 2008 would have been the better time to do it, but that ship has already sailed.

So, we're kind of stuck in this box where nobody knows what's going on. They think central bankers have done one thing, they don't do it. Central bankers will never admit the truth to you, because how could you possibly admit this kind of a truth? Although, I mean, Ben Bernanke came pretty close the other day when he said, monetary policy is 98% talk. That's about right. It's about right. I think it's 100% talk, but that's kind of what needs to happen - all of these things together. Or we have to hope that some cryptocurrency survives the technological infancy to create a workable Eurodollar alternative, which is down the road.

Adam: **01:16:01** So, Jeff, I'm hearing I think you say that, if you were to blue sky this, governments around the world can play a very direct and productive role in remedying the situation. There are steps that governments can take, not necessarily central banks, but the governments could take, in theory, to turn this around or to salvage the current monetary system or to repurpose it in a productive way. But because you don't think that the governments either have the understanding or the resolve or there's too much gridlock or for whatever reason, you have very little hope that governments will take those steps. Which is why you're saying that, sort of the last hope are these digital currencies, right?

Preferably, the governments around the world would wake up, take notice, gain an understanding of what needs to be done, and then take steps to do it. Because you don't think that that's possible, the digital currency direction is sort of our last hope. But I want to pull on the idea that there are things that governments around the world might be able to do to salvage the situation without having to move to a completely new currency regime and new world order. And are some of those potential tools and policies captured in what I might, in a hand-wavy way call modern monetary theory, and some of the sort of soft policies that are implied by some of the big exponents of MMT?

Jeff: **01:17:56** Personally, no. I mean, MMT has been tried in Japan. They didn't call it MMT, and it didn't lead to any of the particular outcomes that they were looking for. I know MMT proponents are going to say no, they didn't really try MMT. Like communism, it's never really been tried. Well, yeah, it kind of has; the idea that you can essentially use the labor force as sort of an inflationary, deflationary moderator, by having the ability to print money and pay workers to not work, is kind of what the Japanese did for a while there. And they even did what was called money finance fiscal expansion, which is kind of a part big part of MMT too. I know MMT proponents are going to look at this and say, "This is ridiculous. That's not what MMT is."

But yeah, it actually is. So, I don't think MMT is a solution. And I don't think it's being offered as a solution to the Eurodollar problem. Because despite what the term implies, there's no money in MMT, and they don't really understand the

monetary system either. So, they're just as in the dark as everybody else is. And it's really more of a political thing than an economic or monetary thing.

Adam: **01:19:06** One of the tenets of MMT, to my understanding anyways, is to employ the governance of the US government and the Treasury, I guess other governments as well, to direct the price of money in the banking system, for different types of channels. So, for example, if there's a perception that the housing market is overheated because the cost of capital for mortgages is too low, then they would raise the reserve requirements on mortgage issuance, for example. But maybe at the same time, they're trying to encourage lending to the energy sector. And so they're going to reduce reserve limits, or otherwise incentivize private banks to lend to the sectors that need to expand, to expand supply to meet too much demand. Right?

So, there's a lot more, I think, to MMT than just trying to control inflation and demand through the employment channel. Right? So, I guess I only say that because are some of these types of tools, those which you might recommend are available to governments, and that might be used productively by governments to help us get out of this type of situation?

Jeff: **01:20:37** Short answer is no. I mean, you could look -- MMT, yes, there's a part of that, which is, hey, let's do resource allocation. Let's do resource allocation in a top-down central planning type way, because that seems to be appealing to a certain type of people who want to believe in a technocracy. Again, this is more political than it is economic. And I think we've seen the answer to that with something like ESG. ESG is falling apart, because all Wall Street did was slap ESG labels on everything and call it credit allocation, according to this governance issue. And I don't see how you overcome that, because as long as you have a private system, and this is true of reserve requirements, or any other type of regulation.

Emil, and I talk about this all the time. As soon as the government creates a regulation, any big institution, any big player is going to already immediately hire an army of accountants and lawyers, mathematicians, and lobbyists to find their way around the regulation. As long as they feel that there's a profit motive to do so they're going to do it. So, if you're suggesting that we eliminate profit motives entirely, eliminating the private system entirely, which some MMT proponents do, then again, that's a different ballgame.

I don't think you're going to see *MMT light* slapped in some place or another, and that's going to solve our monetary problems, because, again, it's a misconception that this isn't really about money for MMT. It isn't anything other than some soft, socialistic type tendency. It doesn't solve the existing problem, because it doesn't even recognize the existing problem. Because the answer is not to have a jobs bank or to more efficiently allocate credit using a top-down centralized structure. That's not the problem here. So, we're not even solving

the problem as it actually is, which goes back to what I said before. Step one here in getting out of this mess is recognizing what's actually wrong.

Adam: **01:22:25** Okay. So, maybe just do me a favor and kind of crystallize what exactly is wrong? And then I'm honestly super curious about what might be done, even if, notwithstanding political gridlock, if we had a cooperative productive political sector, what might be done? And if it's not the political sector, if it's the private sector, how does the private sector act in order to address these issues? But let's start with -- just do me a favor and sort of crystallized for me exactly what the problem is. And then we can …

Jeff: **01:23:07** I'll try to be brief here because I really got to run very shortly. But essentially, the breakdown of the Eurodollar paradigm was the fact that the banks were allowed the privilege of creating money as well as doing the intermediation function. Those two things really should be separate. So, banks, if you're creating money, you shouldn't be involved in intermediation. If you're in intermediation, you probably shouldn't do money creation. Because what happens is, if you're an intermediary, which we absolutely need in any modern industrial economy, then if you're allowed to create money, you're just going to start creating money and stop doing intermediation, which is how you get to things like subprime mortgages and all the financial products that went wrong in the pre-crisis era. So, in a very big picture, very broad sense, I think what the answer here is to separate those two functions again.

Money creation, which people don't understand, is still a function of the banking system. But yet we still depend upon the banking system to do intermediation. There are other ways to do intermediation. *DeFi* is another way to do intermediation. Some people think it's crap, it's a scary proposition. I think it holds a lot of promise, because you can do intermediation without needing Wall Street, without needing big banks at all. And you can also do money creation without needing banks either.

So, that if you have these separate functions, if they're allowed to interact in a very competitive free market sort of way, I think that eventually solves the problem, which is essentially in its very basic, most fundamental case, the banking system is broken. The old way of doing things, you know, the horses have left the barn, the toothpaste is out of the tube, we can never go back to 2007 again, and put everything, you know, Humpty Dumpty is broken. It's never going to be put back together again. And so we should not keep trying to go back to that kind of status quo. We should go, let's separate money creation, let's separate intermediation, and use some kind of intelligent fashion and let the system work like it's supposed to.

Adam: **01:25:06** Right. Okay. No, that makes sense. I'm pretty sure that in a 2012 forensic analysis of, and recommendations after the financial crisis that Warren Mosler said

exactly that; separate the intermediation function from the money creation function for banks. So, that is definitely part of the MMT canon. So, what are the consequences of this if we were to actually legislate this? It seems to me that this would cause a giant unwind of the global Eurodollar system, right? Because the banks can no longer have their web of offsetting transactions and derivatives.

Jeff: **01:25:51** Well, they would lose their privilege. Let's face it, they've been privileged as a money creator, as intermediaries -- they've been in a very privileged position, including information asymmetry. So, yes, that's the big problem here. Well, the biggest problem is to get people to understand what's really going on. The second big problem is how do we get from A to B? Let's say we understand what's wrong with A, and we know what B is going to look like, how do you go from A to B? That's an enormous question in and of itself that would need to be dealt with too.

And I think the best solution to that is that you have a B, kind of running parallel to A and over time, B just sort of organically absorbs the functions of A in exactly the way the Eurodollar system absorbed the functions from Bretton Woods, and hardly anybody noticed. So, you don't have this sharp break and sharp, messy, violent transition point. You just sort of have to have enough time where are we kind of gently transition, all the while underneath that people don't realize it's actually happening. So, you have sort of a parallel structure for a time and then Godwin's Law or not Godwin's Law, Gresham's Law. *Good money drives out bad.*

Emil: **01:27:05** Speaking of time, Jeff, you're on your next show. Forgive me, Adam, for interrupting. But Jeff --

Adam: **01:27:12** That's totally fine. Guys, this was an absolutely fantastic --

Emil: **01:27:15** That's too polite. You know I'm not, so…

Richard: **01:27:16** Yeah, we could have kept going on for probably at least another hour --

Jeff: **01:27:18** I told you, Richard, you were going to regret it.

Richard: **01:27:24** I did not though. Really appreciate the thoroughness of your responses and enlightening us on some of these issues that are so crucial to the system, and to what's going on in financial markets today. And I hope we can get you back on the show at a later date to continue the conversation, both you and Emil. It's been great guys.

Adam: **01:27:46** Well, you've certainly motivated me to get together with Emil and have some beers and sort of some of this stuff out. That's all. That'll be happening soon.

		Anyways, guys, thanks so much. Have a great Friday afternoon and a wonderful weekend. And we'll put a pin in it there.
Richard:	**01:28:04**	Thanks, gents.
Emil:	**01:28:05**	Thank you, Adam. Thank you, Richard.
Richard:	**01:28:06**	See you soon.
Jeff:	**01:28:07**	Take care.
Emil:	**01:28:07**	Bye, Jeff.
Richard:	**01:28:08**	Bye.