MACRO Voices
with hosts Erik Townsend and Patrick Ceresna

Michael Howell: Are We Approaching A Debt Refinancing Crisis?

April 24th, 2025

Erik: Joining me now is Michael Howell, CEO of CrossBorder Capital. Michael provided two downloads for our listeners this week. The first one before the slide deck is a very interesting write up about how CrossBorder Capital thinks about markets. And I'm going to highly encourage everyone, if you've got time to pause here and read it first, it will give you some really good context on how Michael’s firm thinks about markets, which I find fascinating, because any experienced businessman knows that it doesn't work the way textbooks say, where supposedly, you get credit based on an analysis of your ability to repay. It really is based on the system's need to lend more than on the borrowers need, our ability to repay and need to borrow. Michael's approach really analyzes markets from the context of understanding how the system really works, not what the textbook says. I really think that that article is worth a read, but for the part of our audience who won't actually do that because they're busy driving or whatever, Michael, give us the quick rundown, 30 second overview of what the global liquidity cycle white paper says before we move on to the second download, which is your slide deck. And listeners, you'll find those in the usual places in your Research Roundup email. If you don't have one, just go to our home page at macrovoices.com, click the red button above Michael's picture that says, looking for the downloads. Michael, global liquidity cycle, Cliff’s Notes, let's hit it.

Michael: Yeah. Okay, Erik, well, let's try. I mean, basically our approach is, as you pointed out, very different. I mean, what we're looking at is global liquidity at the heart of the system. And effectively, we take a flow of funds approach and trying to understand how liquidity flows and capital flow shifts are really changing the whole dynamics of the system. And we're not focusing on individual securities, which is really the textbook approach. We're looking at, I suppose, behavioral aspects. In a way, we're looking at the constraints that are imposed on investors. In other words, investors operate with constraints about their liabilities. Those are often duration constraints. In other words, they've got to time future retirements, or insurance companies have got to time payouts at certain future frequencies. So, these things are really critical in terms of asset allocation. And then we also look at the constraints that are operating on credit providers. And credit providers clearly are operating in an environment which is highly cyclical, where central banks are operating and changing their own liquidity dynamics. And what we've had, particularly since the evolution, or the evolution since the global financial crisis, is that the whole financial system now is really based around collateral where the repo markets are really central. So, understanding these various dynamics is important, and that's what we put most of our emphasis really on. It's not a textbook model of where interest rates are important, and interest rate setting drives a sort of capital spending cycle. What we're saying is, it's balance sheet that's important. Flows of liquidity matter, and the whole system is now a debt refinancing system, where something like three out of every four transactions in financial markets involve a debt refinancing trade.

Erik: Well, reading your paper definitely resonated for me as being very real world as opposed to textbook. I really love the way where you said the periodicity of credit cycles is not based on business cycles and all that. It's based on the average maturity of outstanding debt, because that's what controls when people need to refinance it. This is more of a refinancing machine than a credit origination machine. So hopefully that's a good teaser to get people to actually read your paper. So, Michael, let's move on to your slide deck, starting with page 2, which says, 2025 Outlook. But maybe before we dive into the outlook, I just want to ask you kind of a contextual question to set this up, because you're a cycles guy, which I appreciate and respect very much. But it also occurs to me that President Trump is kind of a bull in the china shop kind of President, if you think about cycles being like waves on the ocean, when something really big makes a splash, it disrupts the waves. So, should we be expecting cycles to prove the things that they normally prove, or do we think that the policy changes that have been so big maybe disrupt those cycles? How should we be thinking about cycles going into this and then what's the outlook look like?

Michael: Well, I think Trump's trade bomb is clearly a big splash, if I'm not mixing my analogies up. I mean, the way that we think of markets is, there are, if you like, two moving parts, Erik. I mean, one is the flow of liquidity that we've discussed. And liquidity moves in a cycle. That cycle is about five to six years. It's a debt refinancing cycle at its heart, and that clearly matters. And Trump's actions will, I think, interfere with that in time. It's very difficult to say that that's happening right now. But on the other element, which is the other moving part, which is effectively how that liquidity is being allocated, how new liquidity is allocated into markets that is being disrupted. And what you've seen is a turndown in the risk exposure of investors really beginning, I would say, around the middle of December of 2024, and that has accelerated markedly over the last four to six weeks. And what investors are doing, particularly in the US, are actually paring down their risk allocations very noticeably. So, if you look at the effective flow of money into risk assets, it's been curtailed significantly since the Trump trade war.

Erik: Okay, so with that in mind, let's dive in, starting on page 2, the 2025 Outlook. What is the outlook? What do you expect?

Michael: Well, I think coming into 2025, even before the tariff tensions emerged, it was not looking to be a great year, and I think we've got to put this in context as to say where we've come from. And broadly speaking, this bull market in liquidity and in financial assets has been actually a pretty normal one. And we show on the following slide, slide 3, a picture of the MSCI World equity index, which is shown as an orange line there. And we put that, or we benchmark against that against a normal cycle. And that normal cycle is an index that is averaging all past

MSCI equity cycles since 1970. So you see the average cycle, and you can compare that with where we are now. What you can see is that actually the timeline looks remarkably similar. So, we're tracing out a very, very average cycle, and that's more or less underpinned exactly by what's happening in liquidity. Now, liquidity conditions bottomed in October of 2022 and they've been rising higher ever since. They're beginning to wobble a bit right now. I mean, that's for sure. There are a number of reasons that we can go into for that. One of the main ones is that the Federal Reserve is sort of maybe uncertain about the future expansion of its balance sheet. There's a lot of noise coming out about whether the Federal Reserve should have a bigger balance sheet, a smaller balance sheet, or whatever. That, I think is a great, great mistake. The Federal Reserve needs a bigger balance sheet, simply because it needs to help the system refinance or roll over debt. And we know that that debt pile is growing all the time. So, from a policy standpoint, the Fed is uncertain. And then secondly, we've got the other major central bank, the People's Bank of China, that has really been operating a kind of stop-go policy over recent months, because it's been trying to defend the Yuan against what has been until now, strong US dollar.

Erik: Michael, let's talk in more detail about liquidity. On page 4, you've got global liquidity, and then you've got a sequence of slides showing us different aspects of liquidity cycles and how they work. How should we be thinking about liquidity and what it means to markets today, especially in these stress times where liquidity is everything?

Michael: The main point about liquidity, the way that we think of it, is that we're thinking about the flows of liquidity through global financial markets. And what we think of as liquidity is basically all cash savings, all forms of credit that flow through those markets. Now, one of the things to emphasize is, this is not the conventional monetary aggregates, like M1 or M2, this is basically financial liquidity. It's a measure of the capacity of the financial system balance sheet. Now, the reason that's important is that the whole financial system, as we alluded to, is really set up now as a debt refi system, a debt refinancing system. And we've got huge debts out there, something like $350 trillion of debt which needs to be refinanced. Spoiler alert, debt is never repaid, it's only rolled over. And the fact is that if that debt has an average maturity, just to keep the math straightforward, of five years, you need to roll over $70 trillion of debt every year. Now, that's clearly a big ask for financial markets to do, and balance sheet capacity is really critical. So, what we're analyzing here is the changing balance sheet picture for the world financial markets, and that, as we've noted, is cyclical. So, you can evidence the cycle either in terms of dollar amounts on the following slide, slide 5, which actually happens to show there's a very, very tight correlation between swings in global liquidity, which is the orange line, and movements and asset markets, which is the black line on the chart. So, the correlation there is particularly close. And then we go on to show on a following slide, a more, if you like, longer term picture where we've indexed the global liquidity cycle and actually put it into a cyclical framework. Now that data, as an aside, was taken and studied by an independent institute, which is the study for cycles. They did independent analysis and actually confirmed our conclusions that there's a very clear 65-month cycle operating in the world economy around global liquidity, and it's that debt refi cycle, which is really critical to the movement of asset markets globally. Michael,

Erik: I noticed looking at page 6, back in 1973, we only got about halfway up on the black line, and something happened, and it made a nosedive there. It seems to me like if there was ever a moment in history where liquidity might dry up in global international trade, it's when the President of the United States suddenly changes the rules of the game and tells a bunch of other countries that he's not going to do business with him the way he used to. Are we looking at the potential, even though it looks at 2025 here, though we're only halfway up the cycle, maybe we're not going to make it all the way up, and maybe this is as far as we're going to go?

Michael: Yeah, this is very much our fear. And I think there are a number of factors to throw into why that may be the case. One of those is that there is uncertainty about US policy, or clearly US trade policy. And that is something which is, which is also, I think, constraining the Federal Reserve's actions. So, the Federal Reserve, which may have operated, let's say, a looser monetary stance, looking forward through year end, I think now, is more likely sitting on its hands, particularly with regard to its balance sheet. And one of the things that is not coming forward in terms of what the Fed is saying, is any guidance really about future balance sheet size, which I think is a critical element. The other is, really, what China is doing. And the other major central bank operating in the world system, is the People's Bank of China. And you know, as I alluded to earlier on, Chinese monetary policy has really been affected significantly by the Yuan and by the periodic weakness of the Yuan over the last few months against what has been until now, a very strong dollar. Now, the weakness on the dollar is giving the Chinese an opportunity to weaken the Yuan, and we can come on a little bit later to what Chinese policy is, but I think actually it really is centered around the Yuan. And one of the things that China is desperate to do is to devalue the Yuan, but not necessarily, and this is the key point, against the US dollar per se, but against other units, and particularly against gold. But we can come on to that particular thought later. The other factor which is coming into that equation is something called the debt maturity wall. Now, the debt maturity wall refers to the terming out of a loss of debt, both from corporates and from governments during the period of the COVID emergency. And what corporations did was they took an opportunity at zero interest rates to basically re-borrow at low interest rates, and then think about refinancing that debt, pushing it out towards 2026, 2027, 2028. Now that is beginning to come back into the system now, that turned out debt, and that is what is referred to as the debt maturity wall. It begins from about the middle of this year, and I think that's another factor which is likely to sit on the amplitude of the global liquidity cycle.

Erik: Michael, you've got such a terrific slide deck here. I wish we had time for all of it. Listeners, I do encourage you to peruse the whole deck, but I'm going to skip ahead to this chart on page 13. I've heard you talk about this on other podcasts. Give us an understanding of what's going on here as you look at advanced economies debt.

Michael: Well, this is trying to understand the risks at the heart of the system. And as we've been stressing, the global liquidity cycle is really a debt refinancing cycle. And in terms of understanding those risks, what you need to look at is the ratio between debt and liquidity for each economy. And what this slide is looking at is the aggregate debt to liquidity ratio for all advanced economies worldwide. Now, that data goes back to 1980, and unlike the debt to GDP ratio, which is the more favored metric by economists – which I think is a misleading and not particularly robust statistic — the debt liquidity ratio basically drills down to say, what this is telling us is the ability of the system to refinance debt. Now, if you have a very high debt to liquidity ratio, and you can see on the chart, there's a horizontal line that we've drawn, which is the average just over two times. If you get a significantly higher debt liquidity ratio, what you find is there are debt financing tensions, or refinancing tensions, and that's where you often see financial crises. So, what we've identified with the annotations there are past financial crises. So, my contention is that every past crisis has fundamentally been a debt refinancing crisis in some shape or form. Equally, if you go to the opposite side of that, that division to go to a very low debt liquidity ratio, then you find there's an abundance of liquidity. And during periods of abundant liquidity, what you find is you get asset bubbles. So almost all asset bubbles have coincided with a very low debt liquidity ratio. Now, this is important because the latest data shows not only that, we've come out of a huge asset bubble where the debt liquidity ratio was extremely low, for reasons that policy makers in the wake of the GFC and in the wake or during the COVID emergency use balance sheet and liquidity, was thrown at markets, and then equally, debt was termed out into the 26 to 28 years. So, the debt liquidity ratio effectively came right down. So that was the history, and you can see that we've just labeled that the sort of cryptocurrency boom, or the everything boom period. What you're seeing now in the projection is a very sharp upward move in that debt liquidity ratio, and that is because central banks have slowed down their liquidity injections, as I evidenced earlier on.

And secondly, you've got the debt maturity wall coming back to bite markets over the next two to three years, as debt refinancing demands start to hit. Now, you can see that that tension in the following diagram, which is really a schematic diagram, which is showing the outline of how the world financial system has evolved, really, since the global financial crisis. And I want to pick out a couple of points there, and I can go on to evidence those tensions following that. But at the heart of that system is the repo market. And the repo market really is the interaction between collateral and global liquidity. Something like 80% of all lending in the world economy now requires some form of collateral. Now, for many people, that's an obvious statement, in the form of their main borrowing as a home mortgage. So that's collateralized against the value of the real estate. But equally, if you're looking at financial markets, most lending now is collateralized against some financial security, and that's typically a US government bond, a Treasury or a German Bund, or some high-quality form of collateral. Now, the issue that we face is that because of regulations on banks in particular, or just a growing regulation in the system, there's been a migration or a collateral arbitrage away from government issued safe assets like treasuries, to more use of private sector debt instruments which have an embedded a high credit risk in them, and that credit risk is very sensitive to the economic cycle. So, if you start to get an economic downturn, which we're going to be getting now, the credit risk in the system starts to heighten, and you get a pro cyclical and highly risky financial system that becomes in great need of bailout by policy makers and central banks.

Erik: Let's move on to page 20, where you talk about the risk cycle. What is this chart showing us? Is it equity market risk? Is it credit market risk? What kind of risk are we talking about? What is the cycle and where is it headed?

Michael: Well, this is the key point, I think, as a follow on to that, to those remarks about the instability of the system, Erik. What this is showing is the positioning of investor portfolios. So, what we take here is holdings data, and this comes from flow of funds accounts, we look at holdings data for investors worldwide, and we've actually picked out in that slide as well US investors. Now the average, the zero line that runs across the paper horizontal, is looking at an average asset allocation. Now, you can take that sort of generically to be, let's say, a 60/40, equity bond mix, for example. And if you move above that average, so a 20 unit move on the scale is a one standard deviation move. You're moving more and more into risk assets within the portfolio. And if you move below the line, you're moving more into safe assets like cash or G7 government bonds. So, risk assets we take here as equities, corporate debt, emerging market debt, etc. Now, what that cycle seems to show, and I don't want to overemphasize this, is a 9 to 10 year cycle in risk, and what we were already seeing prior to the Trump trade bomb, was that risk cycle being pared down. Now you can see, if you look at it closely, that the. US investor line that's drawn out of that page absolutely collapses over the last three to four months, and there's a very clear risk-off move by US investors. And in fact, the following slide on page 21, actually identifies where in the overall cycle US investors are. So, what this is really telling us that there is some extreme risk-off moves being currently undertaken investors. You know, investor risk appetite is skidded badly in America, and there's some extreme moves. Now, if you look at that in context, you'd have to say that there is value coming back into markets, because asset allocation, by definition, is very, very cautious. The only question about that, or the issue that one has to raise, is that that particular metric works well on an 18-month view, but between now and that 18-month horizon, markets clearly could go down further, and that's really the risk. So, you need the two ingredients, rising liquidity and low investor exposure before you can guarantee strong risk market gains.

Erik: Let's move on to page 24, World Weekly Economic Activity Index, or WEI, what kind of activity are we talking about here?

Michael: Well, this is a metric that we use to try and show that problems are building up. So even before the trade bomb was let off, what you were seeing was a skidding economy. World Economy beginning to evolve. Now, let me just say something about that chart. What it's indicating is a slowdown in the world economy, a marked slowdown that really began from the middle of December, but has accelerated very noticeably through the month of April. Now, that data, or that series, is an AI based system, and what we do is we basically put into the hopper lots of different ingredients, like credit spreads, like commodity prices, like the currencies of trade, sensitive economies, etc. All that evidence is thrown in, and the model sifts out what it thinks is the pattern in terms of world economic growth, and this correlates very closely with later reported GDP data. But this gives us a very immediate view as to what's happening in the world economy. And it's clear that there was a slowdown beginning from the middle of December, but that has now accelerated. Now, the problem comes is that that particular slowdown is souring credit markets. And if credit markets are soured, what you get is a negative feedback within the stability of the financial system, because a lot of collateral is now private credit based. And so, what you can see is a downward move in the global liquidity cycle as a result of that, which would necessitate, in my view, central banks coming in to support the system. And that clearly is a major ask, and we don't think it's currently on the page of the Federal Reserve's agenda right now.

Erik: Michael, you've got a series of slides coming up about the US bond market. Why don't you walk me through it?

Michael: I think the one to start with, Erik, is to look at slide 27, which is looking at, if you like, the key benchmark bond in the world economy, which is the US 10Y treasury note. The orange line at the top of that page is looking at the actual yield, and I think the tram lines that we put on that retell the story. But what you're seeing is a bond yield that is kind of refusing to drop, but seems to be sort of progressively edging up. And if you look at the lower line, the black line that's looking at something which is a wonkish concept in a way, which is the term premia that is embedded in the bond. Now, the term premia is a measure of the compensation that investors require for holding interest rate risk over the horizon of the bond. And this premium, this black line has been progressively rising. Now that's something which is bad news for the value of collateral within the system, because clearly that's worsening. But it's also particularly bad news for new Treasury Secretary, because Scott Bessent, who has something like $9 to $10 trillion of US debt to refinance or fund this year, and what he wants to do is to fund that against a low yield, not a rising yield background. And that's really an issue. Now, one of the problems that the US faces, in terms of our view, is that the US Treasury has really become a price taker in global bond markets and no longer a price maker. And if you look at the data very closely, you can see evidence, certainly from 2020, that this has really been evolving in this way. Now, what this means, is that it's bad news in the context that not only is maybe the environmental confidence in the US Treasury market changing or worsening because of the of President Trump's actions. But equally, the environment in global bonds is not great, and we try and evidence that in the following slide, slide 28. Now, what this is looking at is world bond term premia alongside US bond term premia. And what that chart is trying to show is, and you can see this if you look closely, is that what is happening is that US term premia being elevated and lifted, dragged up, if you like, by rising world bond term premium. Now, why should world bond term premium be increasing? Number one, because Germany has just released the debt break. So, we know that there's likely to be a flood of Euro-denominated debt coming into markets to fund increased defense and infrastructure spending in Germany and probably Europe-wide. And secondly, Japan has got a growing inflation problem, which is worsening the outlook for JGB yields. So, in other words, the US is no longer an island here. It's operating within a global context, and global bond term premia arising. So, the ability of stock bet to actually get yields down is difficult, unless somehow they engineer a recession. And that may be something that we need to think about very seriously.

Erik: Let's move on to China on page 33. What's the story there?

Michael: China is definitively changing, and what you can see, evidence in that chart is liquidity injections by the People's Bank of China. Now, I think there's a number of sort of immediate statements to make about China. What is that, it has, let's say, a fairly simple financial system, nothing like as complex as we're used to in the West. And China's financial system, therefore, is probably more transparent and potentially more stable, but it really rests on the ability of the People's Bank of China to guide it and to source liquidity for the system. And so, it's very important to look at what the People's Bank and the state banks are doing within the Chinese system. Now, what this chart shows is liquidity injections into Chinese money markets. We show it here as a rolling three-month total, and we seasonally adjust the data, because China's financial system is still highly seasonal, notably because of the Lunar, the floating New Year holiday. And what this is demonstrating is a clear increase in liquidity injections by the People's Bank. Now, that has been made easier by the weakness of the US dollar, but it seems as if even before the weakness in the dollar, the Chinese were prepared to actually inject liquidity and risk a lower Yuan. Now, we think this is actually part of a deliberate policy, and to put this in context and show what China is doing, slide 34 is looking in isolation at the debt liquidity ratio of China. Now what you can see, in contrast to what we were looking at earlier for the advanced economies in the West, is a debt liquidity ratio that is high. That chart attests to China's debt problems and the difficulty China was having in terms of refinancing its debt, while it was constraining the amount of liquidity within the Chinese system. And that liquidity was being constrained, largely because for a long time the Chinese authorities were trying to target the Yuan-US dollar cross rate, and as a result of that, they basically were snagging liquidity out of the system. Now, what you can see on the chart is a move back of the debt liquidity line, back towards its normal level. Our original estimation was that China to get out of its debt problems would need to expand its liquidity base by about 1/3 and if you pair that up with currency movements, by definition, if you're increasing liquidity to that extent, you would expect to see something like a 30%, 1/3 devaluation of your currency. But the key point is that it's not necessarily against the US dollar that you would expect China to devalue against. It's against real assets. So, paper assets, which is where debt is denominated, need to be devalued against the value of real assets, and what better benchmark of real assets is the Yuan gold price. Now, we therefore said that if you draw the analogy here with gold, what gold has to do is rise to an equivalent level of a 30% devaluation, which would mean something like 26,000 yuan per ounce of gold. And if you look at the chart that follows on, slide 35, we show the Yuan gold price, and you can see that it's skyrocketing northwards as the Yuan devalues dramatically against gold. And we think this is a deliberate policy. Now you can see this evident in the gold market, because of the change in emphasis away from London towards Shanghai, there's now a constant premium in the Shanghai gold market, and that's evidencing the fact that there is big demand for gold in China. And what you're seeing here in parallel is a devaluation of the Yuan, vis-à-vis that gold. So going back to early 2023, the Yuan gold price was only 11,000 yuan pounds. It's now close to 25,000 and actually inches away from our original target of 26,000. So China is fast getting out of its debt problems, which I think is a very significant point to note in terms of international financial markets.

Erik: Let's talk a little bit more about gold and how far it can go, because anytime that you see a parabolic move in any asset, it's usually headed toward a blow off top. The question is, how much further does it have to go before you get to that blow off top? Based on your understanding of the drivers, the Chinese drivers behind this, is this just getting started, or is it just wrapping up?

Michael: Well, I think that one has to say that to acknowledge your point, Erik, that when you see accelerations like this in markets, one does have to be wary about a pullback. And I think that's a very fair observation. But I think what we're really saying here is, that if you come back to what is the heart of the argument that we're putting is that debt and liquidity need to move in parallel. And if you get excessive amounts of debt being issued within the world economy, you need to match that, ultimately, with liquidity, because debt needs to be rolled over, and therefore you need that balance sheet space or liquidity to do that. Now in the context of the world economy, if you believe that we're in a world of accelerating debt, and I think the evidence is all there, the US budget deficit, for one example, is continuing to rise significantly. The US debt burden, one would envision is growing at something like 8% per annum at least. Therefore, you've got to have liquidity to match that, otherwise you get financial crises. And central banks clearly don't want financial crises, so they're already in the business of supporting that liquidity increase. Now, if you look at it in a broader context, China clearly has to do the same thing. So medium term, we are looking at expanding liquidity, because we're looking at expanding debt. And unless that debt binge stops, and I don’t think it’s likely to, we're in a world of monetary inflation, in our view. Now, monetary inflation is not high street inflation. The two are very different concepts, but monetary inflation is basically devaluing your paper money. And the best long term monetary inflation hedge is the price of gold. We know that through history, and that's clear and well established, and therefore I would say that maybe in the context of this long term debt binge, gold is probably only just getting started. Now, if you start to think about this particular example of the Chinese gold price, and maybe China is pulling the strings here, starting this process, if you are thinking of 26,000 yuan per ounce of gold, and you triangulate back to the US dollar, assuming that the Yuan-US dollar cross rate, the paper currency rate stays pretty much intact at around about 7.3 per US dollar. You are looking at a 3500, 3600 US dollar gold price. That was fanciful, maybe not even a month or two months ago, but clearly we're inches away from that particular fact. But I think that the gold market can go further in the medium term. I wouldn't like to say that it's going to move at this pace over the next few weeks. There may well be a pullback. I'm sure that's right. But then start thinking about other monetary inflation hedges. And one of the recent examples of a viable monetary inflation hedge has been Bitcoin.

Erik: Let's touch on Bitcoin then, briefly, before we close.

Michael: There are some slides that we show in terms of Bitcoin. And I think the two important ones are slides 38 and slide 40. And on slide 38, first of all, we show the movement of the Bitcoin price against movements in global liquidity. The black line here is global liquidity. We look at a six-week change. Now a six-week change is purely an arbitrary number, it's not a fiddle. It's just basically taken to take the noise out of the data series. We could use another filter, but this is convenient. And we show that against an equivalent six-week change in the price of Bitcoin, again taken to remove the noise in the data series, the global liquidity line has been advanced by about 12,13 weeks, and what you find is a very close correspondence between those resulting series. And it looks as if global liquidity is a very good predictor of global liquidity. Now, the pie chart that I referred to on slide 40, actually looks at a more detailed analysis of what drives Bitcoin. This is looking at a decomposition of the systematic influences. And what we've done here is to use a vector autoregression methodology, for those that are familiar with that, which actually looks at the influences on the price of Bitcoin. Now, what comes out of that is an interesting array of data. One is to say that global liquidity is a key factor. It's probably over 40% of what drives the Bitcoin price. There is a slice there of about 20 odd percent which shows risk appetite. Now, what does that really tell us? That tells us that actually, unlike gold, Bitcoin is very sensitive to maybe moves in NASDAQ or moves in risk appetite. So, if NASDAQ collapses, it's very clear that Bitcoin will come off, even despite what global liquidity may be doing on the other side of the page. And equally, if NASDAQ goes up, then you'd expect a positive influence from Bitcoin. But the other elements, the other slices, are referring to gold, and that rather sort of complex slices, which are talking about gold per se, and then the gold-Bitcoin ratio is something which mathematically is thought of as an error correction process. And what that really is saying is that in the long term, gold and Bitcoin are very closely positively correlated. So, a much higher gold price is consistent with a much higher Bitcoin price. So, they act as monetary inflation hedges. But in the short term, they may well be negatively correlated for short periods, as Bitcoin surges gold, then lags, ultimately catches up, then gold picks up, and Bitcoin lags, but then catches up, etc. So, what one would expect now, if this is correct, is that the gold market may well go sideways or even down, but Bitcoin gets a little bit more momentum in the short term.

Erik: Michael, I can't thank you enough for a terrific interview. But before we close, please tell us a little bit more about what you do at CrossBorder Capital, what services are on offer there, and for our listeners who want to follow your work, how they can do so.

Michael: Well, thanks, Erik. CrossBorder Capital is an advisory firm. We advise institutions. We collect data, we have an array of liquidity indexes. We've been doing this for more than three decades. So, we know liquidity data intimately, and that data is available for clients through data downloads or whatever, API files, etc. And if you look at the other side of our business, we provide narrative research as well that institutional clients can take for high net worth or retail clients. We have a different service that is operated through Substack, which is called Capital Wars, that is a shorter, briefer analysis. Less data is available, we don't offer that, but we do give insight into what our thinking is through those pages. So Capital Wars on Substack or the institutional site, which is crossbordercapital.com and then we do occasional tweets on Twitter where the handle is @crossbordercap.

Erik: Patrick Ceresna and I will be back as MacroVoices continues right here at macrovoices.com.