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# When froth turns to fear

- **Markets are reeling from a monetary triple whammy: repo tightness, a faltering of other forms of credit creation, and a record \$900bn in reserves drainage**
- **But all these sources of monetary tightness ought to ease**
- **The question is whether this episode drives a more enduring reduction in risk appetite and fund flows**

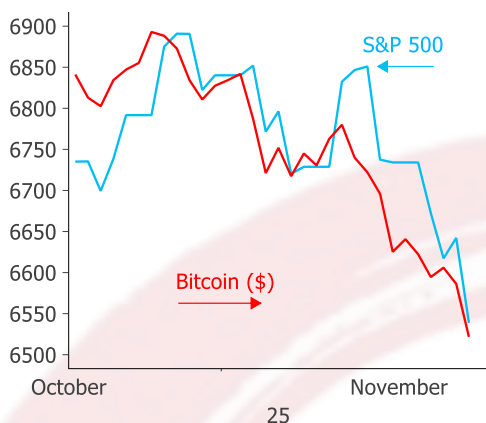
One of the fascinating features of markets is the way that when things go wrong, they often seem to do so all at once. The correction in recent weeks has had multiple strands – from doubts over tech valuations and hyperscaler capex, to fretting about Fed easing, to the gating of a private credit fund, to the precipitous plunge in bitcoin which looks increasingly to be feeding directly into US equities.

In some respects the puzzle has not been why markets corrected, so much as why a correction was so long in coming. Concern about FOMO, froth, and bubble-like price action across multiple asset classes has been fermenting for months, if not longer still. And central bank balance sheets – for long suspect number one when it comes to explaining why so often too much money has been chasing too few assets – have been shrinking for the past three years.

But even if the presence of widespread froth may help explain the simultaneous moves in both risky and supposedly safe-haven assets, that still leaves question marks as to why now. Has risk appetite simply suddenly broken? Both earnings revisions and economics surprises have recently been positive.

**When bitcoin leads the way**

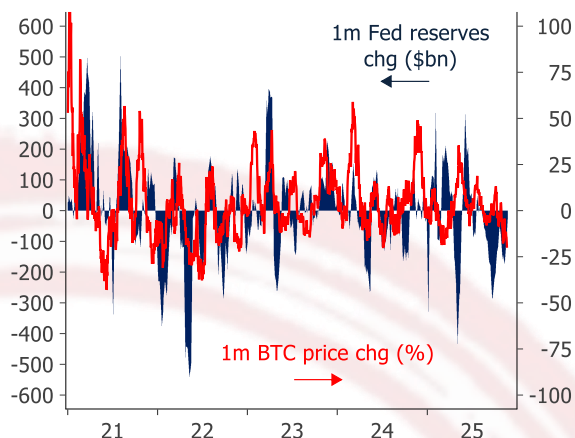
Bitcoin vs S&amp;P 500



Source: S&P, Macrobond, Satori Insights. Looks even more compelling if you use intraday pricing for SPX or ESZ5 on Bloomberg.

**And Fed reserves have led bitcoin**

Fed reserves chg vs BTC



Source: Fed, Macrobond, Satori Insights.

As usual on such occasions, we think the answers lie in the plumbing. And as usual, we think a better understanding of the plumbing – of the processes which create liquidity and which cause it to flow from one place to another – is key to predicting whether the correction will fizzle out or feed on itself. This piece outlines the three elements of the ‘monetary triple whammy’ which has driven markets in recent weeks – but then further explains why the drivers of any further sell-off will likely be different.

## 1. Record reserves reduction

The more we study markets, the more we find ourselves boiling down their moves into two simple factors: how much money the world is creating, and where that money goes.

From this perspective, what has made markets so difficult over the past fifteen years or so is not just the way a high degree of economic and political uncertainty has interfered with the traditional business cycle, but the way monetary and credit fluctuations have become dominated by technical factors.

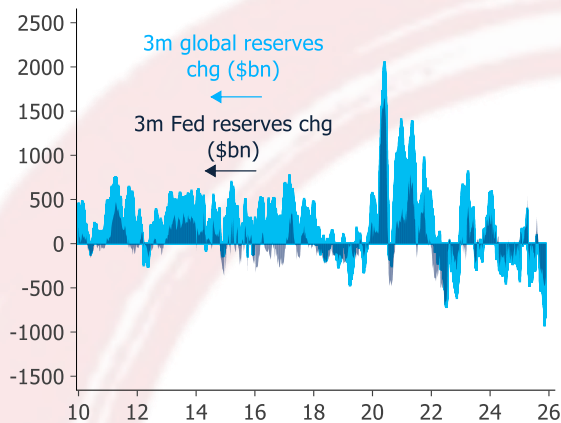
Money creation and money rotation – i.e. borrowing and investor flows – used to be determined largely by the private sector. Even if the impact seemed to come increasingly through asset prices and financial markets rather than the real economy, this explains why interest rates *worked* – by stimulating private sector borrowing when rates were low and curtailing it when rates were high.

But over the last fifteen years, the overwhelming drivers of short-term changes in the quantity of money being created and entering markets have come from the public sector,

in the form of reserves changes at central banks and fiscal policy. Hence interest rate changes have had surprisingly little effect on both economies and even on asset prices.<sup>1</sup>

### A record pace of global QT

Central bank reserves changes, rolling 3m



### Was always likely to affect markets

Central bank reserves changes vs credit, rolling 3m, \$tn

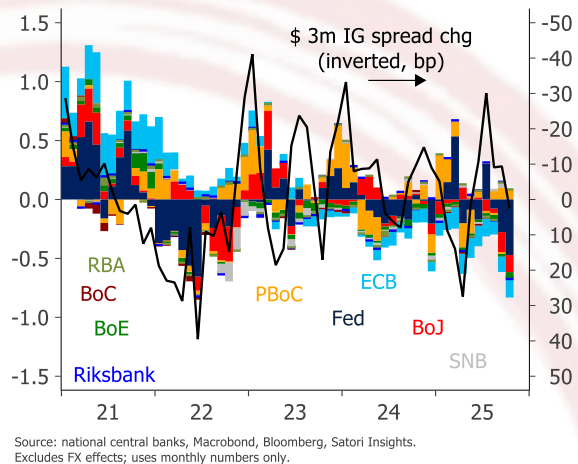
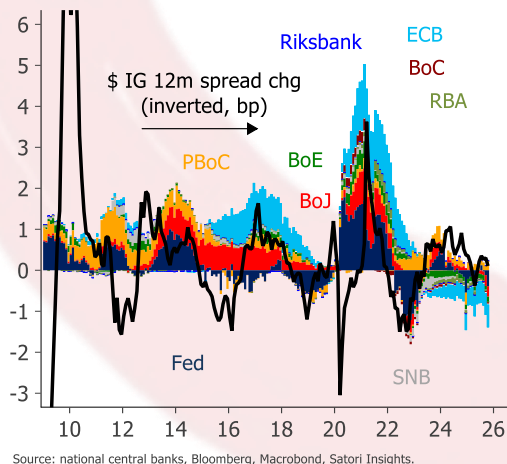


Exhibit #1 in explaining the correction is therefore the fact that the pace of global reserves reduction – which market correlations suggest is a better measure of *de facto* QT than securities holdings or total balance sheet size<sup>2</sup> – has recently accelerated to a new record. Over the past three months, global reserves have fallen by over \$900bn, nearly \$500bn of which has come from the Fed.

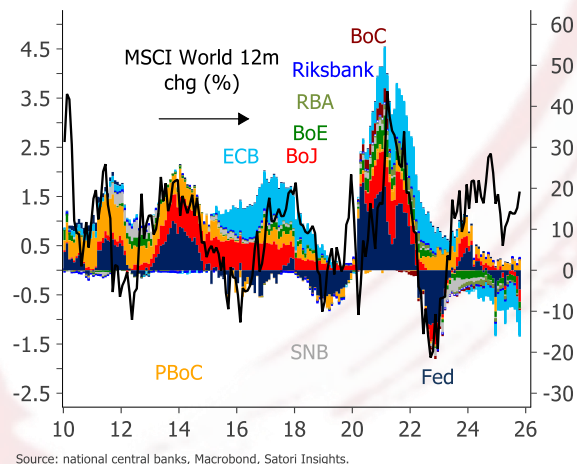
### Credit remains closely correlated

Global CB reserves (\$tn) vs credit, rolling 12m chg



### Equities have had an extra boost

CB reserves chg (\$tn) vs equities, rolling 12m



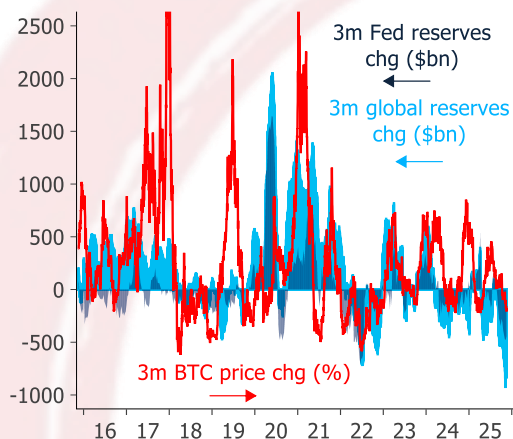
<sup>1</sup> For more on this and illustrative charts, see [Replay: The limits of easy money](#), 23 Oct.

<sup>2</sup> For explanation as to why this is the case, see [Global QT: what central banks haven't learned](#), Mar24.

While the correlation between reserves changes and moves in risk assets has seemed to weaken in recent years, it has never really gone away<sup>3</sup> – and indeed the variations in correlation across asset classes in our opinion shed valuable light on the flows which have been driving each of them. Loose but ongoing correlations with credit point to a general sensitivity to liquidity dynamics. An apparent decoupling with equities points to the importance of additional “excess” inflows.

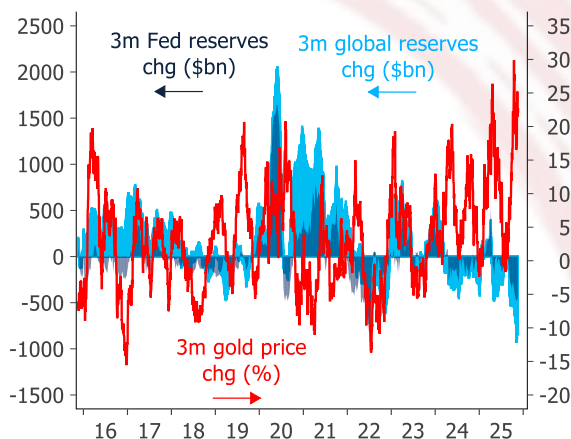
### BTC recently mimicking Fed reserves

Fed reserves chg vs BTC



### Gold has never really correlated

CB reserves changes vs gold prices, rolling 3m



Conversely, the close short-term correlations in recent years between bitcoin and Fed reserves is suggestive of a more mechanical US-based link, perhaps through the importance of margin buying by retail or other sources of leverage. At any rate it helps to explain the magnitude of the recent price plunge, which in turn seems to be feeding into weakness in US equities, and especially into names popular with retail.

And while gold’s lack of correlation also points to the importance of “alternative” flows driving it, in its case we would consider these a source of relative strength and an ability to provide diversification away from the macro currents buffeting other markets – exactly as seems to be happening at present.

## 2. A faltering in fiscal flows

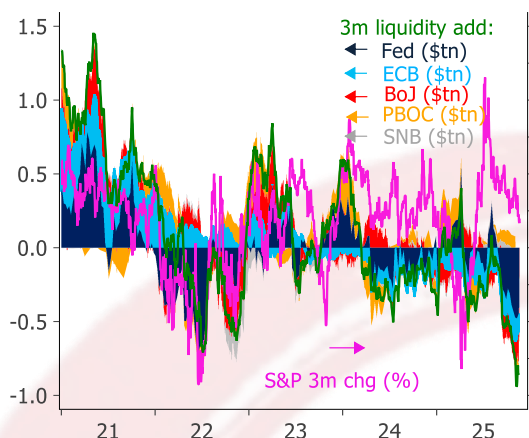
Two further factors help to explain why the reserves drainage – which, after all, has been progressing more or less steadily over the past few years – suddenly had an outsized impact. The first is a faltering in broader credit creation, from fiscal policy in particular.

<sup>3</sup> [\*Flows and liquidity analytics\*](#), daily.



**Not only has reserves growth been -ve**

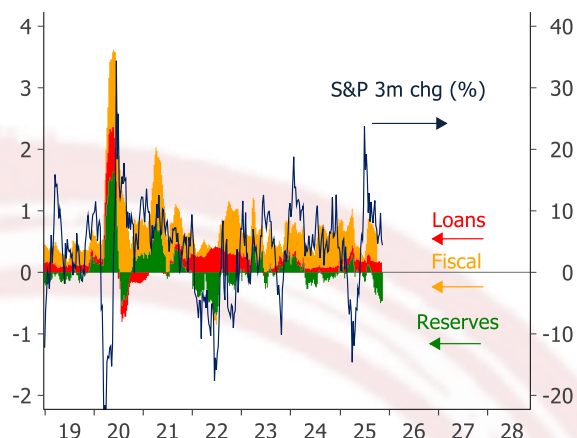
Central bank liquidity vs US equities, rolling 3m



Source: national central banks, S&amp;P, Macrobond, Satori Insights.

**US credit creation has faltered**

Sources of US money and asset creation, rolling 3m, \$tn

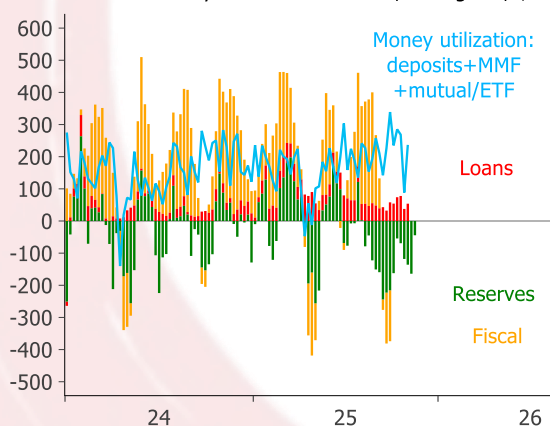


Source: Federal Reserve, Satori Insights. Last few fiscal data points missing (see below).

While reserves creation and destruction may have the most outsized and obvious impact on markets, broader credit creation from loan and bond borrowing also plays a significant role. Much of the money flow which has supported risk assets in general, and equities in particular, at elevated valuations in the face of reserves drainage has come from fiscal policy.

**Even as credit creation has faltered**

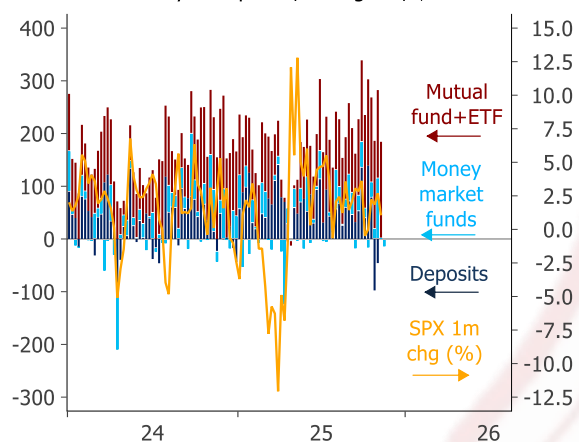
Sources of US money and asset creation, rolling 1m, \$tn



Source: Federal Reserve, Satori Insights. Recent fiscal data not yet released but likely negative due to shutdown constraining federal payments.

**ETF inflows remarkably durable to date**

Uses of US money vs equities, rolling 1m, \$bn



Source: Federal Reserve, ICI, Macrobond, Satori Insights.

A look at what we call the “sources” and “uses” of money creation in recent months shows the extent to which markets have been out on a limb. Inflows to mutual funds and ETFs have continued, even as deposit growth and money market fund growth turned negative. It is as though the downstream flow was continuing even as the source of funds had dried up: US fiscal flows turned sharply negative over the past month, with the shutdown curtailing federal payments.

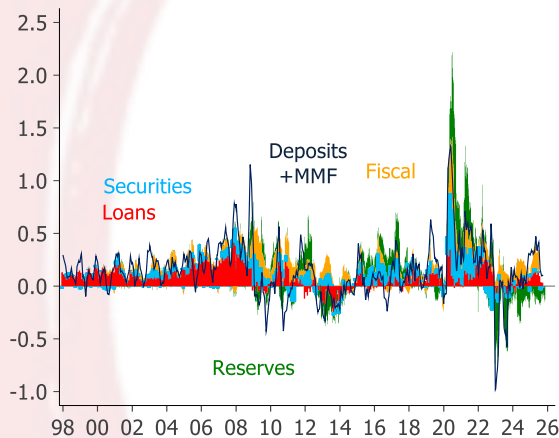
What has made this doubly damaging is the way that the fiscal contraction has been combined with an increase in the Treasury General Account at the Fed, hence shrinking reserves. Not only did the shutdown reduce broad credit growth; through the TGA

increase there was effectively a removal of part of the existing stock of credit from markets onto the Fed's balance sheet. To see the significance, imagine the opposite scenario, in which the Treasury not only chose to create fiscal stimulus through larger deficits but also simultaneously decided to run down its balance at the Fed and put more money into the economy.<sup>4</sup>

While the shutdown is obviously a US-specific dysfunction, the market impact seems likely to have been amplified by a coincidental but similar monetary slowdown in Europe. In € as well, it looks to us as though the drag from reserves drainage through QT in recent years has been partly offset by ongoing fiscal money creation. Fiscal borrowing looks to have been the reason why quarterly € deposit growth had been running almost €300bn above loan growth.

### Fiscal driving money creation in € too

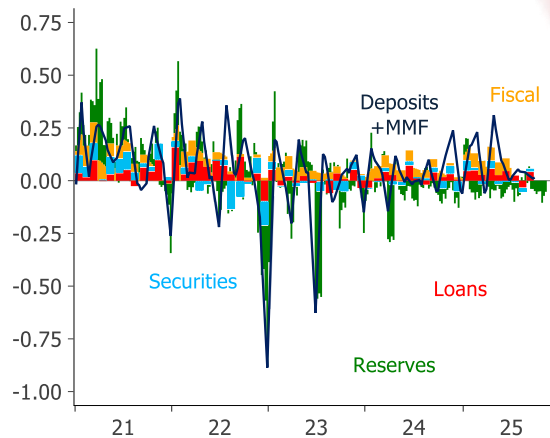
Sources and uses of € money creation, rolling 3m, €tn



Source: ECB, Eurostat, Satori Insights.

### But recent growth has been lacklustre

Sources and uses of € money creation, rolling 1m, €tn



Source: ECB, Eurostat, Satori Insights. Fiscal data released with lag.

While (as in the US) the fiscal data are released with a slight lag relative to reserves and banking data, the abrupt slowdown in € deposit creation looks likely to have been caused by a reduction in fiscal borrowing. As in the US, this therefore – at least temporarily – removed one of the main sources of fuel for risk assets in recent weeks, leaving them vulnerable to ongoing QT.

## 3. Ructions in repo

The third element of the 'triple whammy' is the squeeze in \$ repo. In addition to the direct monetary supply-demand or portfolio balance impact of reserves drainage – which we find affects risk asset pricing regardless of reserves levels – it so happens that the latest reserves drop has taken US bank reserves from levels where they were 'abundant' to where they are merely 'ample' or even 'scarce', causing repo rates to spike and having

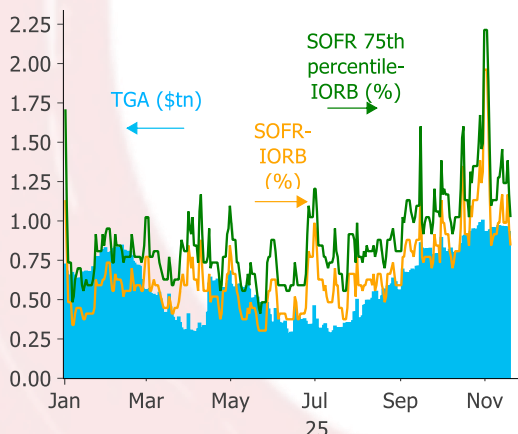
<sup>4</sup> Indeed, you may not need to imagine this in the not-too-distant future.

repercussions across markets. Having written on this a couple of weeks ago,<sup>5</sup> there are only two things to add.

First, while the imminent end of Fed QT and prospect of renewed asset purchases should provide some small help in easing reserves shortages, their major driver in coming months still seems likely to be the much larger fluctuations in TGA. The discussion in the Fed Minutes shows some awareness of the growing impact on repo and the need to adapt policy accordingly. However, its relatively cursory nature (and the apparent absence of any proper discussion about whether it might make sense to end QT prior to 1 December given the interaction with the shutdown) still suggests a significant underestimation of the impact reserves changes are having on markets.<sup>6</sup> Temporary Open-Market Operations of the sort some market participants are calling for, given the stigma attached to the SRF, still seem unlikely – never mind the sort of wholesale sterilization of TGA fluctuations we would advocate or the much more interventionist and ultimately tighter balance sheet policy pursued by the ECB.<sup>7</sup>

#### You'd think they would sterilize this

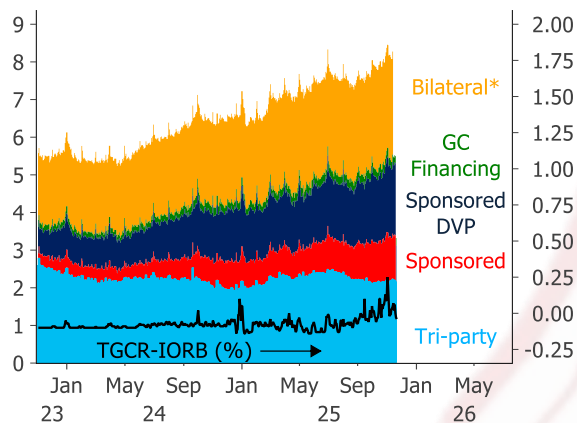
\$ repo rates vs Treasury General Account balance



Source: Federal Reserve, Bloomberg, Satori Insights.

#### Rates pressured but no unwind

US repo outstanding by venue, \$tn



Source: OFR, DTCC, Bloomberg, Satori Insights.  
\*Released with lag; latest observations missing.

Second, it seems notable that while the repo rate swings over the past two weeks have certainly *felt* like they were driving markets, with tightness corresponding to equity and often bitcoin sell-offs and vice versa, there has actually been little or no unwinding of actual repo outstandings. At most there looks to have been a further switch away from triparty and bilateral repo towards sponsored, and a shift from riskier collateral towards

<sup>5</sup> [Why shutdown squeezes funding](#), 4 Nov.

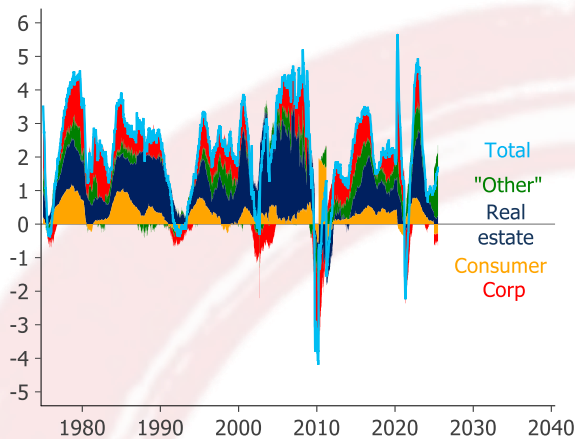
<sup>6</sup> As close as they come is a passing reference by staff to "interactions with the Treasury's management of the federal debt". [Minutes of the Federal Open Market Committee](#), Oct 28-29.

<sup>7</sup> [Towards a new Eurosystem balance sheet](#), I. Schnabel, 6 Nov.

Treasuries. As one market contact put it to us, “It’s not scarcity of funding; it’s scarcity of balance sheet. There is liquidity everywhere... it’s just not getting to those who need it.”

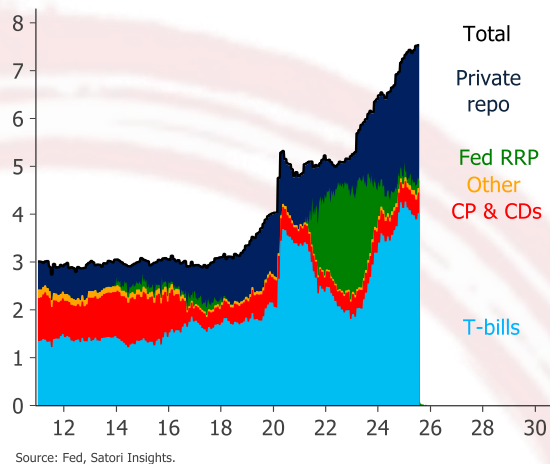
### US loan growth is to the financial sector

New loans by sector, rolling 12m, % GDP



### Repo positions historically extended

US money market fund assets, \$tn



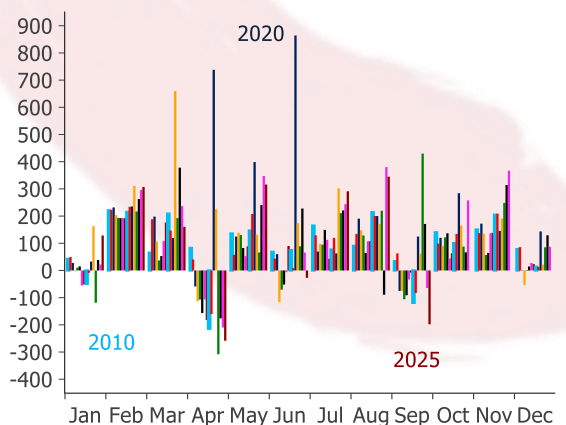
## From squeeze to ease

The reason we think this rather intricate analysis of the three elements of the “triple monetary whammy” is useful is because of what it implies about the future. To varying extents, all three factors which contributed to recent monetary tightening look set to ease.

Global reserves drainage looks set to continue, but at a significantly slower pace: perhaps \$200bn over the next quarter vs \$900bn over the prior one. Aside from the Fed’s abandonment of QT and potential return to small asset purchases – which feels like it may come sooner rather than later – BoJ reserve falls should also diminish, having been boosted by an unusual concentration of maturing JGBs.

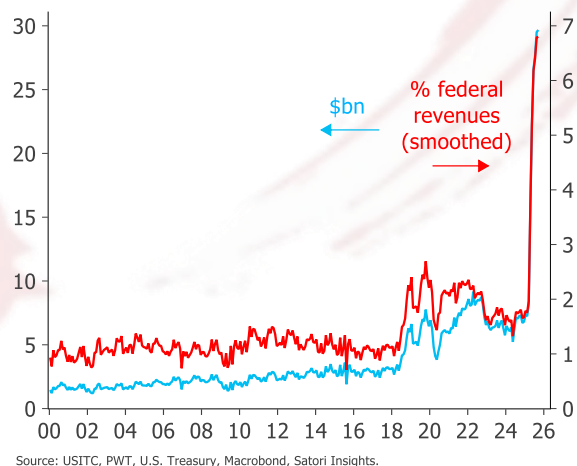
### April is the cruellest month

US fiscal deficit by month, \$bn, 2010-2025



### Peak tariffs?

US tariff revenues, monthly





Support from fiscal policy should resume. While the payback from delayed US shutdown payments is only estimated to be a little over \$50bn, even normal calendar seasonals – when they are not being interrupted by shutdowns or Covid – are typically supportive until April US tax payments. If anything, it seems plausible the deficit may be boosted through additional giveaways in the run-up to midterm elections. Even tariffs may now have peaked given the climbdown on many food items.

Finally, while repo rates may remain sticky over year end, they are already declining and seem likely to do so further, if only because the Fed is so concerned about them.

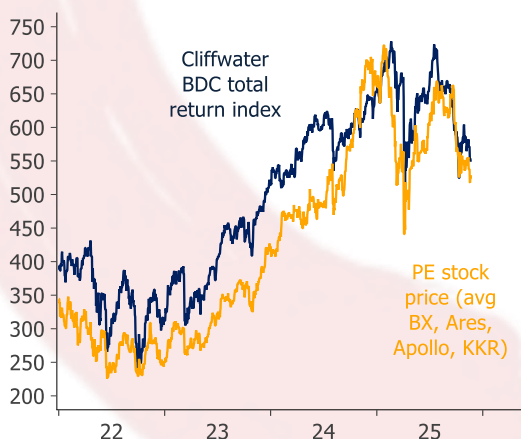
## From froth to fear

None of this guarantees that the correction is over – but it does mean that any further driver would likely come from a different source: a rotation away from perceived risk, rather than a further reduction in monetary fuel.

The bear case is that too many assets, from bitcoin to BDCs, are still the source of crowded, momentum-driven longs which will now be subject to re-evaluation. At a minimum it is alarming how in many cases the buy-the-dip mentality seems no longer to suffice – even when earnings have surprised to the upside. Private equity and Nvidia are two cases in point.

### When earnings are not enough

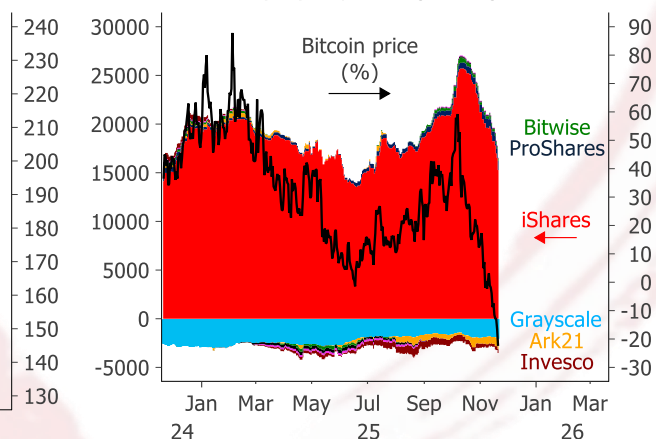
Total return indices, Jul14=100



Source: Morningstar, Bloomberg, Cliffwater, Macrobond, Satori Insights.

### If fund flows follow performance...

Bitcoin ETF flows (\$m) vs price chg, rolling 6m

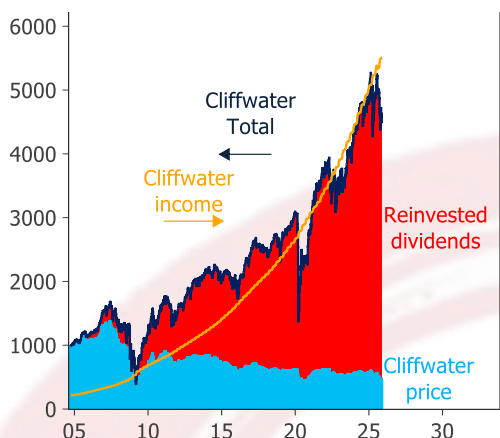


Source: Bloomberg, Macrobond, Satori Insights.

Worse, there is the risk that selling begets more selling, not only because fair value is so hard to establish but in the case of credit because a curtailment of inflows could well lead to increased PIKing, fewer dividends and ultimately an increase in credit events. More funds erecting gates like Blue Owl would be a distinct red flag.

**Bulk of BDC return = reinvested income**

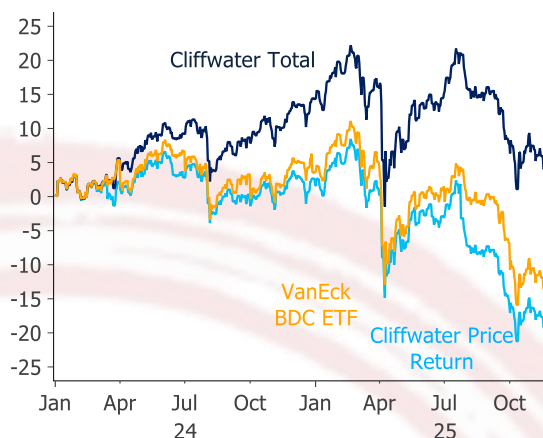
BDC index decomposition, 2005=1000



Source: Bloomberg, Satori Insights.

**How many divs will actually be paid?**

Return since 2024, BDC indices, %



Source: Bloomberg.

Similarly in tech space, while recent new bond issues have seemingly been well subscribed, there is a risk that steady widening in response to the weight of supply ultimately undermines the equity story and hence even confidence in credit.

**FCF concerns => credit often leads**

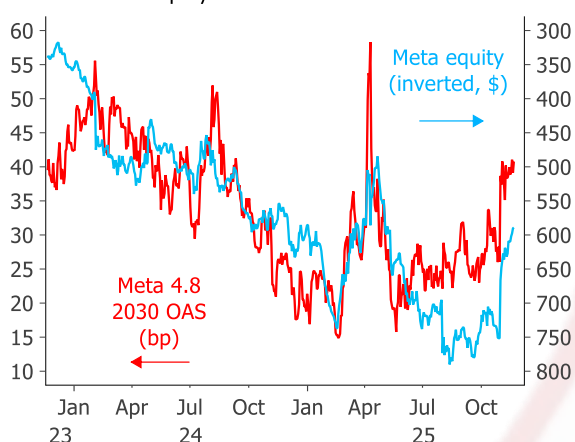
Amazon credit vs equity



Source: Bloomberg, Macrobond, Satori Insights.

**Equities "ought" to outperform**

Meta credit vs equity

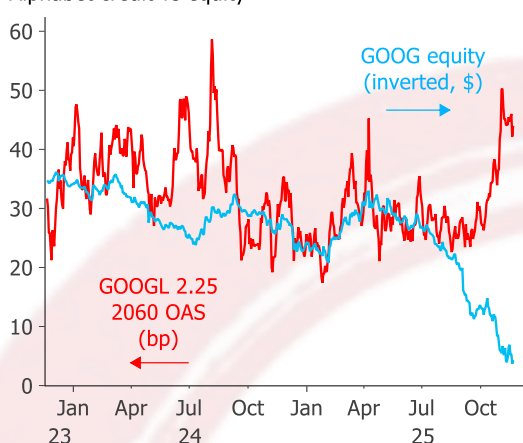


Source: Bloomberg, Macrobond, Satori Insights.

What "ought" to happen is the textbook response to leveraging seen at Alphabet, where credit spreads widen but equities rally on regardless. And yet so circular has been the financing in the sector, and so great are the doubts about future free cash flow, that this is far from certain. Most attention has fallen on Oracle, but the potential for stronger credits to get caught up in the competitive capex frenzy – or even just the desire for a cheap sectoral hedge – seems large.

**Leveraging usually drives divergence**

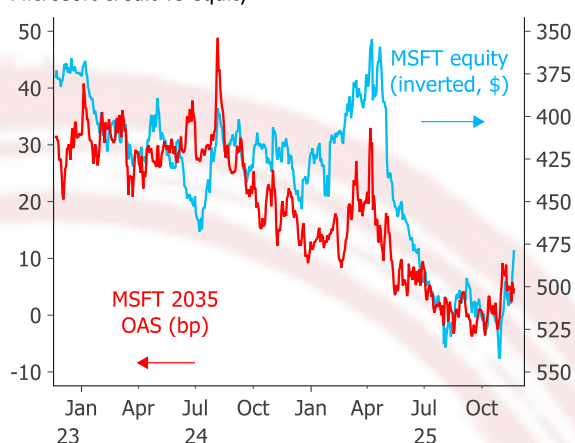
Alphabet credit vs equity



Source: Bloomberg, Macrobond, Satori Insights.

**Many spreads still seem tight**

Microsoft credit vs equity

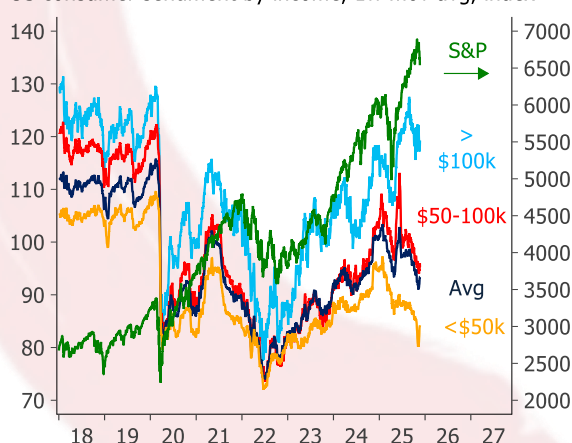


Source: Bloomberg, Macrobond, Satori Insights.

Before we get too carried away with the potential for the whole credit-funded edifice propping up broader asset valuations immediately to come crashing down,<sup>8</sup> it is worth considering the case that it doesn't – at least yet. Yes, in a K-shaped economy the potential for pessimism to start at the bottom and work its way up through the wealth ranks remains substantial, and an asset price sell-off would reinforce that. And yes, high-yield fund flows have been notably soft in recent weeks.

**When pessimism is contagious**

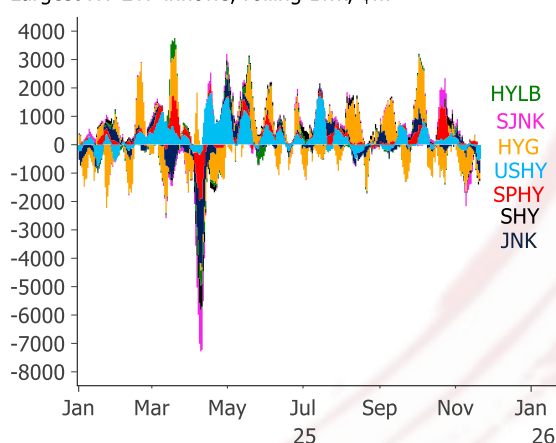
US consumer sentiment by income, 1w mov avg, index



Source: Bloomberg, Macrobond, Satori Insights.

**A temporary blip?**

Largest HY ETF inflows, rolling 1wk, \$m



Source: Bloomberg, Satori Insights.

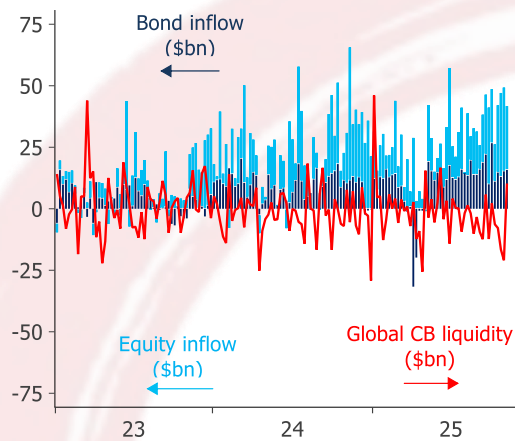
But the broader fund flow backdrop has remained remarkably benign – even in the face of the biggest reserves drainage on record, and even as fiscal support has temporarily faltered. Both history and recent rhetoric suggest central banks are far more likely to ease to counter further risk weakness than they are to tighten in the face of a renewed melt-

<sup>8</sup> Ray Dalio's latest article is particularly good on this point. See [The big dangers of big bubbles with big wealth gaps](#), LinkedIn, 20 Nov.

up.<sup>9</sup> While it remains the case that we would rather invest in gold or value equities than in the froth-flecked sectors beloved by US retail, it still seems unlikely to us markets succumb to fear just yet.

### Weekly fund flows

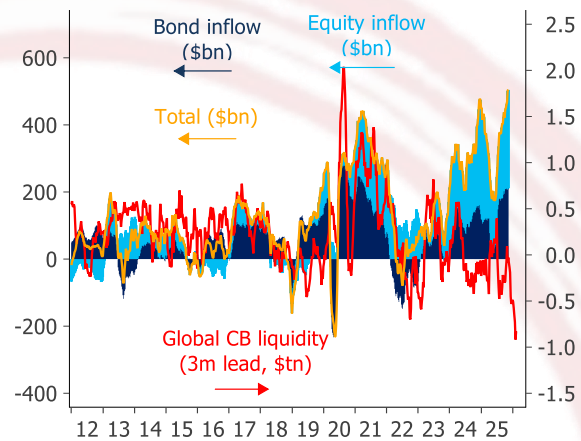
Global reserves chg vs mutual fund+ETF flow, rolling 1w



Source: national central banks, ICI, Satori Insights.

### Quarterly fund flows

Global reserves chg vs mutual fund+ETF flow, rolling 3m



Source: national central banks, ICI, Macrobond, Satori Insights.

<sup>9</sup> *The blinkered Fed*, 30 Oct.