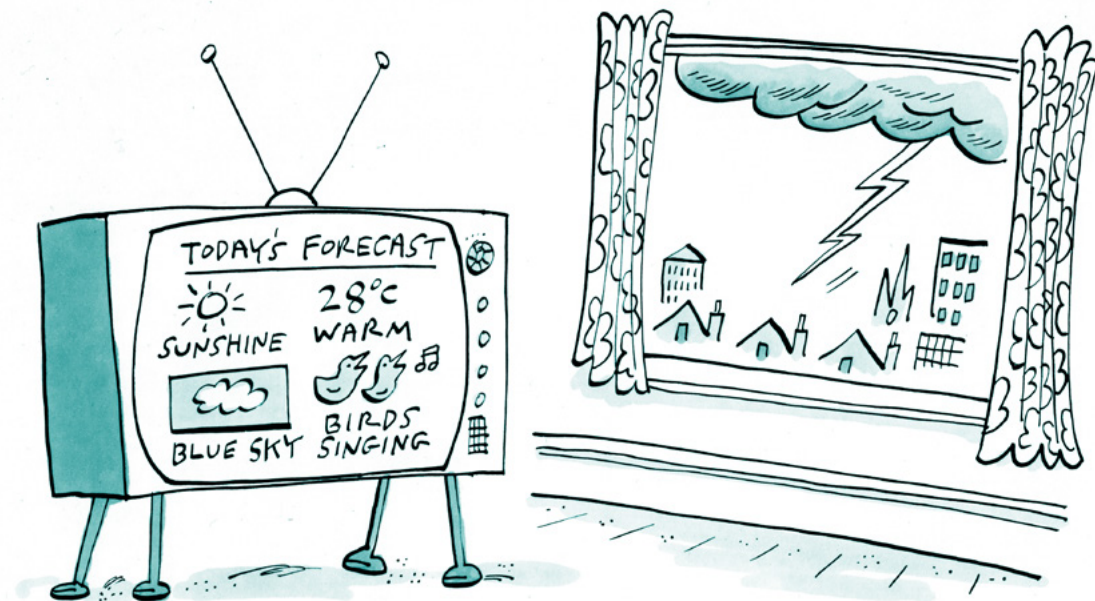


# Something new under the sun

## **FORECASTING IS A THANKLESS ENDEAVOUR.**

But it's necessary – for investors and meteorologists alike. Last year, preparing portfolios for something which would have subsequently been declared 'out of the blue' proved futile as markets were buoyed by free-flowing liquidity and stronger economic growth. So is it time to abandon the forecast?

Emphatically, no. Novelties have emerged in the financial system which heighten the risk of a crisis and could amplify market moves in the event. These emergent features – the new things under the sun – are yet to be tested. When they are, investors will once again blame it on the weatherman.



**HENRY MAXEY**

Co-CIO

**“EARLIER ON TODAY, APPARENTLY A WOMAN RANG THE BBC AND SAID SHE HEARD THAT THERE WAS A HURRICANE ON THE WAY.** Well, if you’re watching, don’t worry, there isn’t.”

Those were the infamous words of British weather forecaster Michael Fish, a few hours before the Great Storm of 1987. In 2023, our forecast that slowing economic growth and a deterioration in liquidity conditions would lead to a hurricane in financial markets was an error in the opposite direction – a severe weather warning but no storm. Instead, we saw strong growth from a surprise positive

fiscal impulse. And this was accompanied by improved liquidity because of how that fiscal expansion was funded.

The Ruffer portfolio is built to deliver positive performance in all market conditions. Last year's error was not the decision to prepare portfolios for a sharp change in the weather, but our selection of the assets held to drive returns if skies remained blue. So what of tomorrow's weather?

The focus of this article is squarely on liquidity – an important pillar in the theory that informs our portfolio construction, but not the only one. First, I'll briefly recap how liquidity dynamics developed in 2023. Then I'll explore the emergent novelties in the financial system which heighten the risk of a liquidity crisis and could amplify its severity.

Liquidity can mean different things in different contexts. Here, we use liquidity to describe the purchasing power available to a current or prospective asset owner within the financial system.



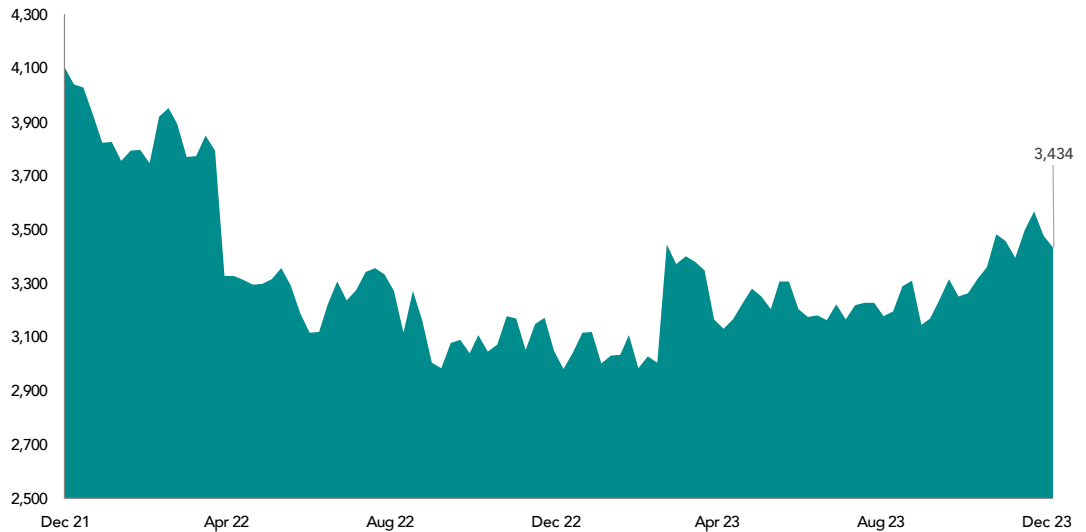
## LIQUID LUCK?

Despite massive inflows into money market funds out of bank deposits and despite ongoing quantitative tightening (QT), the reserves of the US banking system (and leverage of the financial system) increased in 2023, rather than decreasing as we expected.

Reserve cash balances within the Federal Reserve (Fed) system is our current proxy for liquidity conditions in financial markets (Figure 1). It directly affects the aggregate financial sector balance sheet. In early 2023 – alongside those bank reserves – there were \$2.5 trillion dollars in the Fed's reverse repurchase programme (RRP) facility. The RRP had become so large because it represented the best and safest cash return for investors. When an alternative asset – Treasury bills (issued by the US government to fund its fiscal expansion) – offered a better return, money poured out of the RRP into reserve balances. This increased liquidity in financial markets and enabled investors to re-leverage. This is a possibility again in 2024. But, if the Fed chooses to flood the system with more liquidity, it would significantly increase the likelihood of further inflation volatility, creating the type of environment I described in the 2022 Ruffer Review.

So has danger been averted, or merely postponed?

**Figure 1**  
**RESERVE**  
**BALANCES**  
**HELD WITH**  
**THE FED**  
**\$BN**



Source: US Federal Reserve

### A TIGHT SQUEEZE

Our answer is that it is postponed.

Why can't this benign free-for-all continue? For two main reasons: the mechanics of liquidity tightening reasserting themselves; and asset preferences of money market funds returning to the Fed's RRP facility. The latter is most likely to happen when markets anticipate imminent rate cuts, and Treasury bills of short duration yield less than the rate on the RRP.

QT – which sucks money out of the system – remains the Fed's preference. Meanwhile, there's danger in an exhaustion of the re-leveraging of financial markets, which has been so supportive of liquidity. Why? Because many investors have their portfolio risk exposure governed by volatility or allocate to risk based on trends in asset prices. Once portfolios have adjusted to the upper end of their risk limits (which is a self-reinforcing dynamic because the re-risking tends to reduce volatility and support price trends), markets become vulnerable to a reversal.



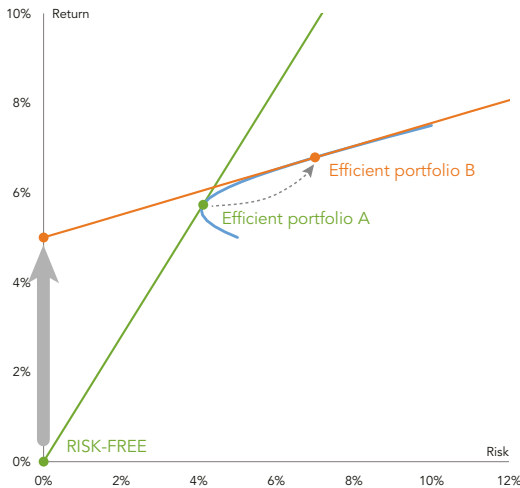
Our concern is that the reversal will have more in common with 1987 than any of the other crises in the last 30 years. But to suggest markets are prone to a 1987-esque crash is not to say we have designed a portfolio solely geared towards that outcome. As those factors which made 2023 benign go into reverse, they will do so from a starting point of extremely compressed risk premia, extended investor positioning, buoyant sentiment and more fragile fundamentals. Our investment philosophy guides us towards owning assets on the other side of these dynamics whilst acknowledging ever-present (and ever-changing) opportunities to make money in different parts of the market.

Danger is heightened today as a result of some emergent features of the global financial system – the new things under the sun – which have not been properly tested and could amplify market moves. I'll consider these novelties in turn: 'run to RRP' risk; the emergence of multi-strategy hedge funds using stop-loss risk management; the rise of zero days to expiry options (ODTE) markets; the continued migration of derivatives to central counterparties; and algorithmic market making.

“ Our concern is that the reversal will have more in common with 1987 than any of the other crises in the last 30 years.”

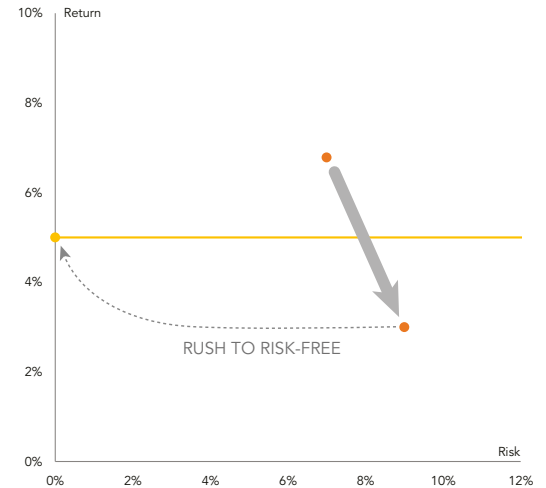


**Figure 2**  
**A RISK PARADOX**



Source: Ruffer, Bloomberg

**Figure 3**  
**DASH TO CASH**



**‘RUN TO RRP’ RISK**

The RRP facility was introduced to allow the Fed to raise interest rates in a post quantitative easing (QE) and excess bank reserves world. It provides a riskless, ‘administered’ interest rate – where the yield doesn’t fall as demand for the facility rises. The rate is set five basis points above the lower bound of the Fed’s interest rate band, which will look very attractive when investors start to fear the downside in risky assets again and bid up the price of riskless T-bills.

One way to conceptualise this run risk is to consider some textbook risk-return charts.

Figure 2 shows how, for a given efficient frontier, a rise in the risk-free rate can push investors into a riskier portfolio (with a worse risk-return trade off). This holds until risky returns drop below the risk-free rate, at which point the optimal allocation is 100% cash – illustrated by Figure 3. There’s a tipping point beyond which the dash to cash becomes self-reinforcing. Central banks would probably cut interest rates in the event of any serious financial stress, but the aggressive rate cuts needed are likely to be reactive, not pre-emptive.

### POD SHOPS AND COPYCATS

The multi-strategy hedge fund model is becoming a victim of its own performance success. This model allocates capital across lots of independent portfolio manager ‘pods’. It then fillets out unwanted risks, leverages up and aggressively manages the capital allocation across those pods, using stop losses. Long-run historic performance for these funds, especially the blue-chip ones, has been eye-wateringly impressive.

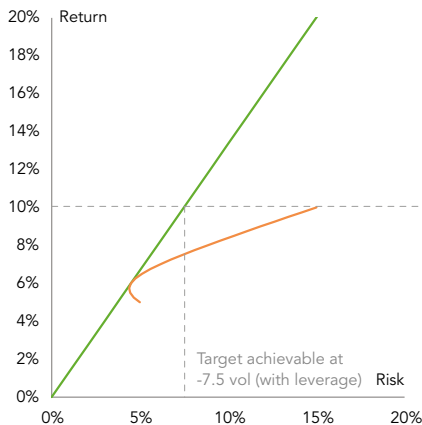
This approach to asset management also looks attractive in a world where bonds no longer act as an offset to equities. As Figure 2 showed, a rising risk-free rate and high bond price volatility can force investors to seek return much further out along the risk spectrum. If this is too uncomfortable, then an alternative is to hold cash plus some leveraged risk premia strategies, a practice known as yield stacking.

“The clients carry all the risk and most of the costs.”

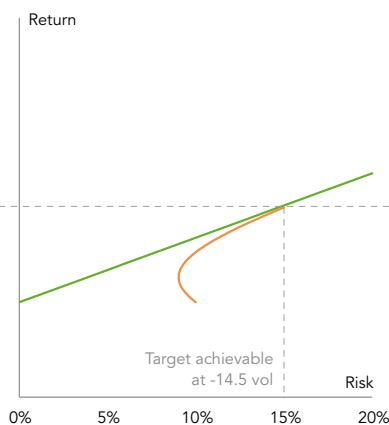


Figure 4/5/6

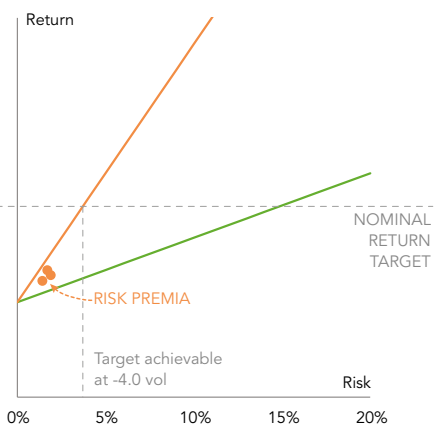
The typical risk/reward relationship during periods of negative equity/bond correlation eg pre-pandemic



The risk-free rate rises, bond volatility doubles, bond/equity correlation turns positive and therefore more risk must be taken



Stacking low volatility risk premia over high risk-free rates and using leverage achieves the target return with lower volatility. These premia are momentum-driven and illusive



After bonds’ growth stocks’ and 60:40 portfolios’ terrible time in 2022, it should be no surprise that yield stacking and diversified risk premia strategies like multi-strategy hedge funds seemed attractive options in 2023.

As a result, these strategies now collectively manage between \$300 billion and \$600 billion, which is, on average, leveraged three to five times. To keep up with the growth, there has been aggressive competition for talent and aggressive increases in fees. This includes the notorious pass-through model, which can lead to performance fees being paid to individual pods even when the overall fund has not generated a positive performance.

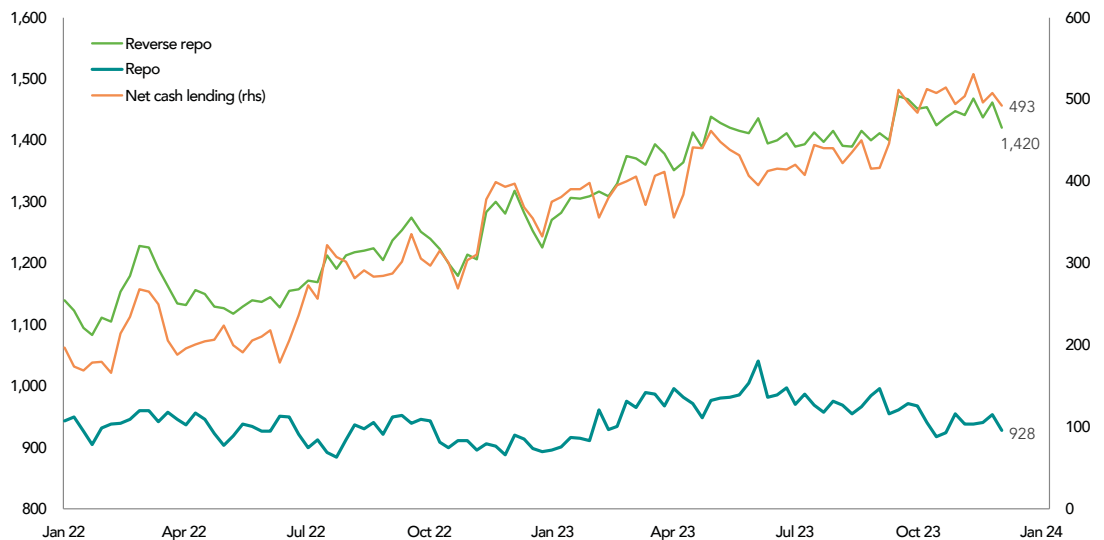
This has become a massive moral hazard machine. Individual portfolio managers are incentivised and expected to max out their risk budget in the hope of collecting performance fees. When strategies don’t

work or traders get stopped out, they can generally find another seat at another fund without too much difficulty. The clients carry all the risk and most of the costs. It is the reincarnation of Wall Street’s proprietary trading desks in asset management, with upside-down incentive structures, without the same regulatory oversight and with ill-fated stop loss risk management.

To illustrate the regulatory blind spot, the Office of Financial Research in the US did a pilot study on the opaque, \$1.4 trillion non-centrally cleared bilateral repurchase agreement (NCCBR) market, which is used primarily by hedge funds to leverage their trades. It found that over 70% of Treasury repo in NCCBR was transacted with zero haircut – ie the theoretical leverage available to buy US Treasuries was infinite.

The net cash lending by NCCBR primary dealers (Figure 7) is a good proxy for the leverage demands of hedge funds. It increased by about \$300 billion in 2023.

**Figure 7**  
**LENDING BY PRIMARY DEALERS, \$BN**



Source: Federal Reserve Bank of New York



“ It would not surprise me if multi-strategy hedge funds were similarly vilified after the next crisis.”

Some of the strategies employed by these players, such as dispersion trading, have become crowded. In an unwind, they could turn a low correlation, low volatility market into the inverse very fast. Something akin to this happened in August 2007 – a fire sale liquidation of quantitatively constructed portfolios which revealed a systemic risk in this part of the hedge fund industry.<sup>1</sup>

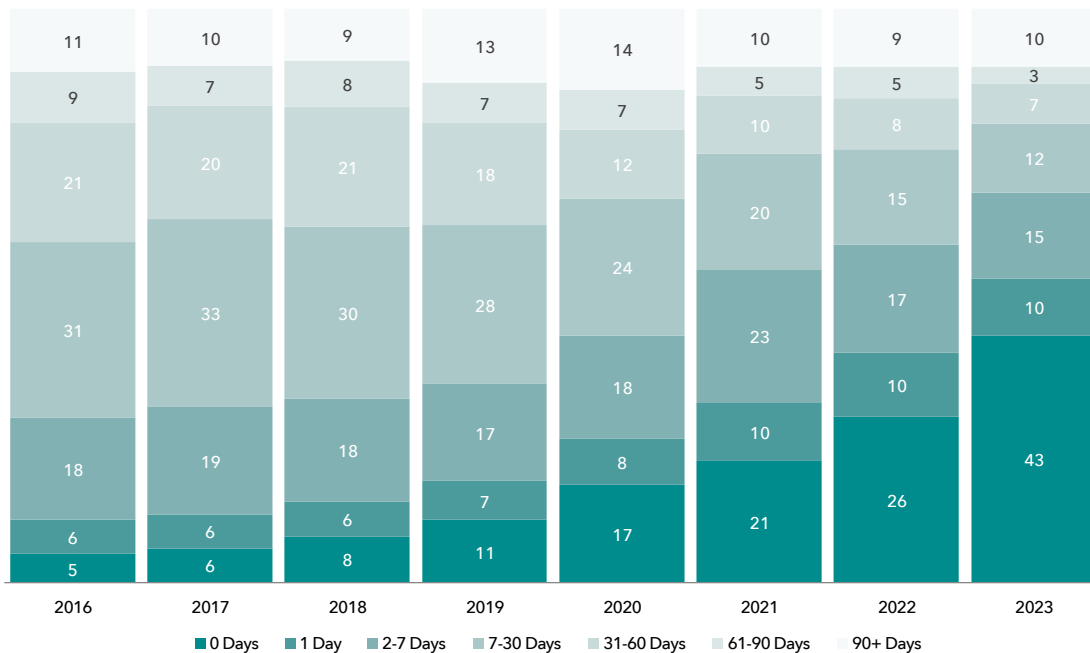
Portfolio insurance – a dynamic hedging strategy based on stop losses which was designed to let pension funds hold a higher

equity allocation ‘safely’ – was deemed the villain of the 1987 crash. It would not surprise me if multi-strategy hedge funds were similarly vilified after the next crisis.

**ZERO DAYS TO EXPIRY OPTIONS (0DTE)**

These are options contracts which are opened and closed within the same day. Figure 8 shows the enormous growth of interest in these options over the past few years.

*Figure 8*  
**TIME TO EXPIRY OF S&P 500 OPTIONS %**



Source: Chicago Board Options Exchange

1 Khandani and Lo (2007), What happened to the quants in August 2007?

There seems to be little clarity or agreement on who exactly does what within this market. Its advocates say it allows for more specific hedging of, or speculation in, event risks, thereby providing greater flexibility and more complete markets. Detractors say it is just a casino for all those with post-covid stock market gambling addictions.

Those who can see all the details of the activity (such as the CBOE) seem to be comfortable there is nothing to be afraid of; the net exposures are low, they say.

Naturally, that makes me nervous. And it seems to have caught the eye of financial stability watchers at the European Central Bank (ECB), who said this in a recent report:

“The potential for toxic combinatorial chemistry worries me most.”

“Some characteristics of ODTE options might, however, increase procyclicality in the equity market. The smaller premia paid for options with a shorter time to expiry mean the effective leverage embedded in these contracts is much higher. This can magnify their impact on the underlying stock market because of the way exposures are managed by option sellers. Some traders only hedge their position after breaching a certain loss threshold.”<sup>2</sup>

Note another stop loss behaviour within intraday options.

My concern is less that this ecosystem is risky now, per se. It is more how it will interact with other parts of the market during a period of stress. The potential for toxic combinatorial chemistry worries me most. For example, during financial stress different players may seek to use this market to lay off risk, disrupting the market’s normal balance. Or stress could change the behaviour of existing players in the market.

## CENTRAL COUNTERPARTIES AND MARGIN REQUIREMENTS

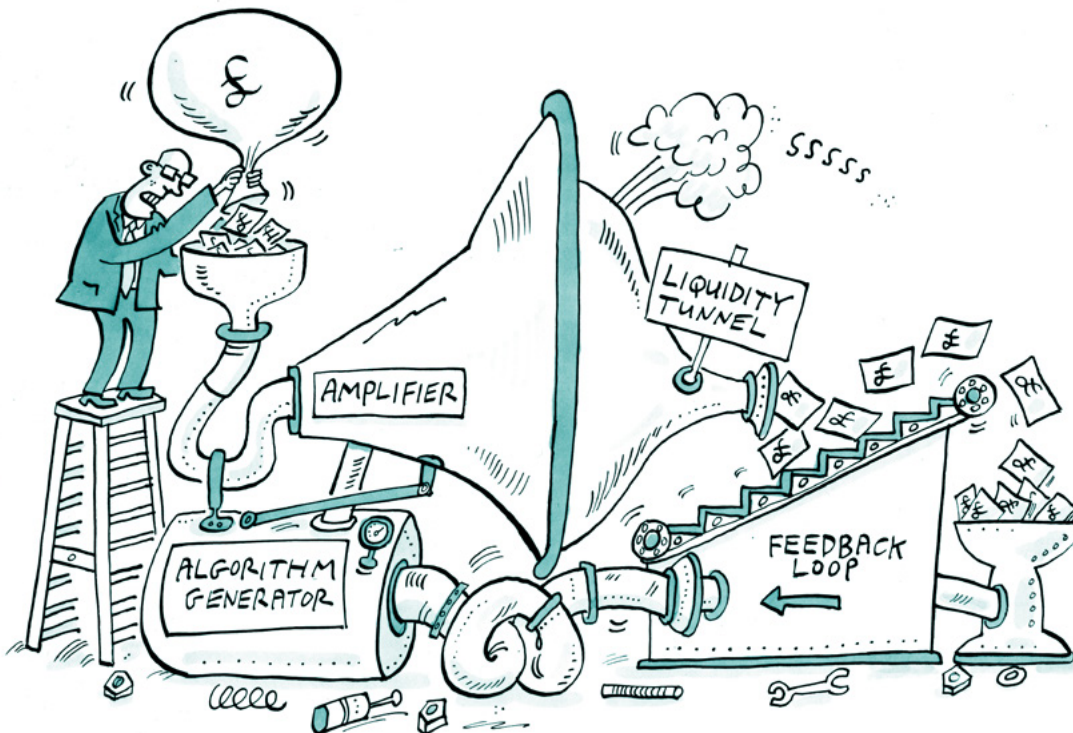
Since the 2008 financial crisis, there has been a push to move as much bilateral derivatives business – eg interest rate swaps – as possible onto central counterparties (CCPs) in order to reduce counterparty credit risk concerns in stressed markets. These efforts have introduced different risks. In particular, margin requirements tend to be pro-cyclical, meaning they can increase during periods of market stress. This can create a liquidity squeeze, as market participants need to sell assets quickly to meet margin calls.

## ALGORITHMIC MARKET MAKING

We have already seen algorithmic market making fail under stress. It has attracted some scrutiny but remains a feature of markets. Algorithmic market making improves liquidity when markets are operating normally but detracts from liquidity in tail events. In 1987, the withdrawal of specialists from the market during the crisis meant the quoted NYSE stock index was not based on live prices for all its constituents. This made arbitrageurs reluctant to step into the basis – the difference in price between the cash market and the futures market – which had opened up between the

futures exchange in Chicago (where there was heavy selling of index futures by portfolio insurance funds) and the underlying equities on the New York Stock Exchange.

Once the arbitrageurs stepped back, liquidity worsened, which exacerbated the falls and increased the dysfunctionality. If liquidity provision disappears when markets behave unusually, you have an amplification mechanism – and one which is much faster than human specialists. In the modern age, as we saw in the case of Silicon Valley Bank, runs happen far faster than was ever imagined in the past.



## AMPLIFIERS

The common thread running through all these developments in financial market architecture is that they are likely to amplify short-term liquidity squeezes and price volatility. This matters because a lot of money is managed systematically these days, with risk asset exposures scaled mechanically according to volatility and price trend signals. And, if you include money which is not run systematically but is effectively governed by backward looking volatility-based risk metrics, that probably accounts for the majority of the asset management industry. So, if liquidity, correlation and volatility become an amplified feedback loop and this disrupts price trends, enormous selling flows can be unleashed. And today flows seem to matter more than fundamentals.

Mike Green at Simplify has done some work to show that, when ETFs' and passive index vehicles' share of an index rises above 40%, the market shifts from being driven by fundamentals (eg earnings) to being driven by flows. The market becomes pro-cyclical.

In this scenario, in-flows tend to benefit the largest, most liquid and currently most crowded names in an index. And vice versa.

Fans of the HBO series *Chernobyl* will recognise what I am describing as a 'closely coupled system'. That is, one in which the components or elements are tightly linked together. In such systems, changes or disturbances in one part quickly and directly affect other parts. In our financial application, the system is complex, tightly integrated, interdependent and highly sensitive to liquidity conditions. Crucially, it predominantly sits outside the banking system, where much of the post 2008 crisis regulatory focus has been.

People often think financial catastrophes occur because herds of humans panic when the emotional pendulum swings from greed to fear. The next market sell-off will be much more mechanical, mathematical, precise and fast. Regulators and policymakers, meanwhile, are human – their reaction times are slower, with decisions made by committees.

“ Algorithmic market making improves liquidity when markets are operating normally but detracts from liquidity in tail events.”



“ People often think financial catastrophes occur because herds of humans panic when the emotional pendulum swings from greed to fear. The next market sell-off will be much more mechanical, mathematical, precise and fast.”

### A BOLT FROM THE BLUE?

For most people these days, the 1987 crash is a faded memory or just a market meme. Asked to describe what happened, the vast majority would cite portfolio insurance as the root cause. Some might recall the notable macro features of the time, such as the big trade deficit, the sharp rise in interest rates and the weak dollar. Those close to the coalface might remember some of the proximate events: a data release revealing a larger trade deficit than forecast; proposed curbs on tax breaks for company acquisitions during the corporate raider era;

the British Petroleum initial public offering; and an attack on a US oil tanker in the Persian Gulf.

Few, I imagine, would discuss the regulatory compromises which had emerged over years of squabbling between the different regulatory authorities as Chicago and New York battled for dominance of futures markets. Or that the influence of portfolio insurance had been increasingly evident in markets in the years preceding, particularly the violent movements in the final ‘witching hour’ of trade on the days futures and options contracts expired.

The 1987 crash was not a bolt from a blue sky due to a single, clumsy portfolio management mechanism. It was the culmination of many innovations and evolutions in a system architecture which ultimately proved to be catastrophe prone and had already provided many clues to this vulnerability.

Today's market participants consider the introduction of circuit breakers – ie the pause or closing in trading after the market has fallen by a specific amount – the post 1987 regulatory innovation likely to prove most effective at preventing a rerun.

## S&P 500 CIRCUIT BREAKERS

### LEVEL 1

Triggered if the S&P 500 index falls 7% from its previous close. Trading is halted for 15 minutes, provided this occurs before 3.25pm (Eastern Time). If the drop occurs after 3.25pm, trading will not be halted.

### LEVEL 2

Triggered if the S&P 500 index falls 13% from its previous close. As with Level 1, trading is halted for 15 minutes if this happens before 3.25pm and is not halted if the drop occurs after 3.25pm.

### LEVEL 3

Triggered if the S&P 500 index falls 20% from its previous close. Trading is halted for the remainder of the day, regardless of when the decline occurs.

“ The 1987 crash was not a bolt from a blue sky due to a single, clumsy portfolio management mechanism.”

Interestingly, despite the numerous post-crash studies and enquiries (notably the Brady Commission report), few recommendations were agreed upon. Circuit breakers were one, but there was real scepticism at the time whether they would actually help.

When so much money is systematically managed – directly or indirectly – circuit breakers can buy a little time for policymakers to try to figure out what is going on. But they can also exacerbate moves. For example, I wonder how many traders of oDTE options know what price their option will be settled at if the market closes down 20% on a circuit breaker? Is it -20%? Or the price of the index at the open the following day – ie potentially a lot lower?

Spoiler: -20% is not the right answer.

“ Today, I see a closely coupled financial system sensitive to pro-cyclical liquidity in which the largest investors tend to want to move in the same direction at the same time.”

Imagine what this uncertainty does to selling flow as the market threatens closure.

In her brilliant book on the 1987 crash, *A First-Class Catastrophe*, Diana Henriques described the Brady report conclusions as follows: “It wasn’t about market prices; it was about market power – unprecedented market power, capable of derailing the financial engines of the country. All that was required was for a significant portion of the world’s biggest and wealthiest investors to move in the same direction at the same time.”

Today, I see a closely coupled financial system sensitive to pro-cyclical liquidity in which the largest investors tend to want to move in the same direction at the same time.

As we found in 2023, liquidity is hard to pin down and harder still to forecast accurately in time. But, over time, we can have more confidence. The conditions which made 2023 so benign can easily persist into 2024, propelling markets even higher. Some

even predict 2024 markets will be protected by pre-election politics and the deep state motivation to keep Trump out of the White House. Perhaps.

And there are levers that can be pulled to keep liquidity supportive. But markets don’t tend to dance to political tunes for sustained periods, and liquidity will eventually tighten, through QT or balance sheet mechanics. Then, the risk will be an amplification to the downside.

In the UK, the mood music to the financial crash of 1987 was the Great Storm, an event which defied the weather forecasters. The storm was caused by an extratropical cyclone rather than a more easily forecastable tropical hurricane, and what made it so fierce was a small area of highly intense wind known as a sting jet.

We don’t know exactly when the next sting jet of illiquidity will hit markets but, when it does, the financial storm will be declared ‘shocking’ and ‘out of the blue’.

We have been surprised by how long it has taken to happen, but we want to ensure portfolios are not caught short when it does.

In the meantime, we will remain cautious in our allocation to risk and opportunistic in our return-seeking forays and resolve to do a better job for clients in 2024. ●



“ We don’t know exactly when the next sting jet of illiquidity will hit markets but, when it does, the financial storm will be declared ‘shocking’ and ‘out of the blue’.”