



Investment review

Jonathan Ruffer

Chairman

Behind the illusion of stability

Henry Maxey

Chief Investment Officer

January 2019



Investment review

“I thought you chaps at Ruffier said that you’d never lose money for me – what’s gone wrong?”

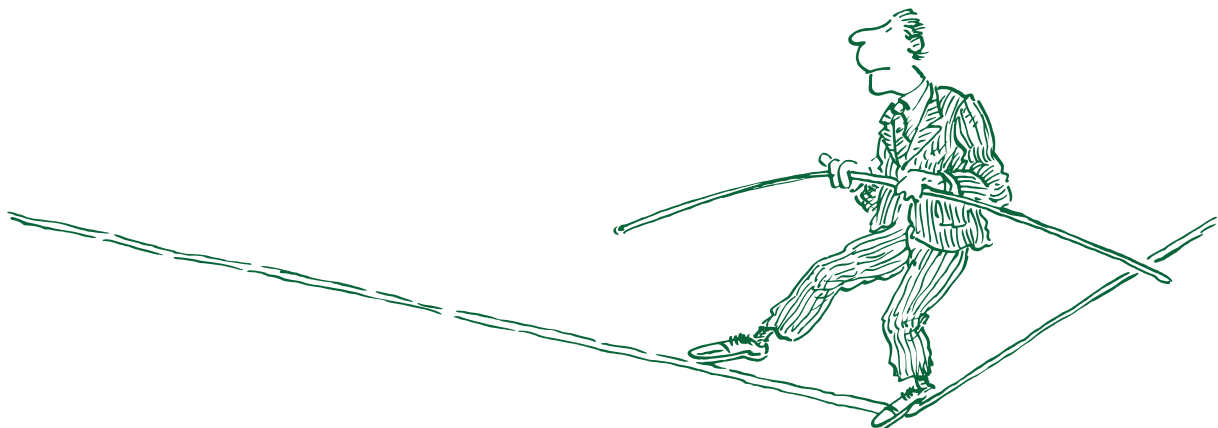
The purpose of this review is to present a balance between the acknowledgement that we have let people down in 2018, and to state that we are fully prepared for the battles ahead – which we are.

The weakness in markets reflects the passing of an inflexion point of mood: from a sensation that we’ve been living through extremely benign investment conditions, and that now we have moved into a much harsher environment. We have been arguing that the new climate will see a market setback punctuated by a trinity of mischiefs: the broadness of the setback, the speed of the fall, and the extent of the decline. If this proves to be accurate, it will represent some of the most challenging conditions for a generation. In broad terms, our strategy has been – and still is – to have a limited exposure to equity risk, and to combine this with powerful protections. These barely protect at all against limited falls, but will build into a powerful carapace when gales become storms. It is hard to protect risk assets from ordinary setbacks – everybody

knows these can happen routinely, and protection against them is prohibitively expensive.

Our central belief is that there lies ahead of us market conditions which are capable of causing permanent damage to people’s wealth, and our absolute preoccupation is to prepare for this, while continuing to accept that the timing is uncertain. It would be reasonable for investors to feel that the events of December give credence to our view that bad things are, indeed, on the way, while at the same time they might question whether we have a handle on navigating it. This review, and the accompanying report by our Chief Investment Officer, Henry Maxey, are to provide reassurance on the navigation.

The two reports – this one and Henry’s – are designed to be complementary. His report is an analysis of the pressures on the market – it is technical, going into the plumbing of the system. I highlight it because it brings together a wide range of disparate threads to create a cogent single narrative. I will therefore use this review to concentrate on what we are doing in the portfolio; the key to why we are doing it is set out in Henry’s piece.



Let me turn first to our equities. These accounted about 40% of portfolios in 2018; last year they fell, on average, by 14% – around 6% of the whole portfolio value. In a world where 90% of asset classes (as tracked by Deutsche Bank) have had a down year in dollar terms, there has been little possibility of diversifying into ‘pockets of strength’, but, even allowing for this, there needs to be a further explanation for the extent of the equity fall. At the beginning of the year, equities could be categorised as: momentum (largely growth stocks), value (cyclicals, financials etc) or safe, ‘no surprise’ companies. The right place to be was in the latter. The first category, momentum, turned out to be the hare – a stellar first half, and ‘cow attempting the moon’ in the second half. The tortoise, which won the race, was found amongst the safe staples, concentrated into those companies which did not put, commercially, a foot wrong. While they might seem to have been an obvious place for Ruffer portfolios, they were, and are, dangerously expensive. Additionally, the purpose of our equities is to make money – we parade the virtue of safety and protection, but we would not be out-performing the equity indices over 25 years of existence if we had not made good money from the companies we invest in. Last year we favoured ‘value’ stocks, many of them somewhat troubled businesses – troubles which in our view were fully priced into their ratings. With every sign of a late-cycle boom in the economy, which benefits the earnings of cyclical companies, and accompanied by higher interest rates, which assists the financial industry, we concentrated on these. We were not wrong on the economic growth, nor the interest rate rises, but the market has savaged the value stocks. If you take risk, you get risk. As the markets declined, we took out some of the risk in financials and the retailing sector, as events there showed that profits can fall as fast as, if not faster than, share prices. Simultaneously, we added a little to our protective assets. We have been pleased to see the gold price creeping up – again, we have increased our exposure there. The value at the moment is in

gold stocks, rather than gold bullion. The mining companies’ share prices have been in long-term decline, and have reached that happy-hunting ground where the enemy of stock appreciation is not bearishness, but indifference. In a world where everything goes down, before everything rallies, and then everything... here is a genuine diversifier. Gold is an opaque and shadowy investment – many refuse to admit it is an investment at all – and so its early signal of a positive response to difficult markets generally is a hopeful sign.

I want to write – for the umpteenth time – about the inflation-linked bonds within the portfolios: we have held them in the UK for a long time, and they have been reinforced by TIPS in the United States.

How can it be that we are worried about inflation while simultaneously preoccupied by market conditions which will be horribly consistent with a powerful – possibly overwhelming – deflation? A dislocative fall in markets would almost certainly create a deep economic contraction, as it did in 2008 – some of the early figures a decade ago showed catastrophic falls in national outputs. These are seemingly the exact opposite conditions of the inflation needed to make these critters crit. We do not see it like that.

The inflationary tinder is dry. The western world, excluding much of Europe, enjoys full employment. Its hand-maiden is a newly energised and militant work force in France, Germany, the US and Britain – wages in the UK are rising at an annualised 3.3%¹, the highest for ten years. This is no time for a gift of easy money from the Federal Reserve in America. A more interesting question is whether the new-ish incumbent as its chair, Mr Powell, will give in to the knock-about pressure from Donald Trump to do so. Knock-about, for sure – but is it knock-out as well? Given that posterity judges chairs of the Fed harshly if they surrender to political pressure – Arthur Burns’ teatime chats with President Nixon come to mind – our guess is that Mr Powell will leave it late. But there’s

¹ Labour market statistics time series, 11 December 2018, ons.gov.uk

another possibility, not talked about much in the corridors in which we move – will Mr Powell be the umpteenth establishment figure to resign? His replacement, Mr Stooze, will be thought almost certain to accommodate the president and, in the eventuality, will do so.

Combine these two elements – water cannon and people’s quantitative easing, and you have created the latest version of the motorway to inflation: M1 and M3 were never intended to give inflation a name, but they will adequately signal the direction of travel. In the past, I have tended to disingenuity as regards the transfer mechanism whereby inflation appears – observing only that if there’s a war on the way, a *casus belli* is never hard to find at the appropriate time. This articulation goes further than previous reviews – it is now possible to look at how current events will play out inflationarily.

Inflation-linked bonds are, perhaps surprisingly, not responsive to the onset of inflation. They ask the question: ‘but where are interest rates?’ If the answer is that they have been jacked up pre-emptively to head off the inflation, then the bonds will go down. But that is far from the position today. Western financial conditions have been sustained on a diet of minimal nominal interest rates, and, because inflation has been quiescent, low real rates (ie the nominal interest rate, adjusted by the inflation rate), too. The central plank of orthodoxy, which, in today’s conditions, is not wrong – things are too brittle for interest rates to go up, whether in nominal or in real terms. The authorities, having tried

to get nominal interests below zero, discovered that the side-effects were traumatic, and quickly desisted. But if inflation came into the system, the chances are that interest rates will lag the onset of inflation itself. This is the catnip for inflation-linked bonds: they are geared to the difference between the after-tax yield on money, and the inflation rate. In the mid-1970s, this was over 20% for a while. At 25%, cash in a bank account is not just hung and drawn – every year, it is quartered, too.

In short, they are an essential ingredient... for the next-but-one move.

What should be made of all this? It turns on whether we are reading things right. A critical mind might think of the seeming stopped-clockery of such a long wait for these events – a wait which is not unequivocally over, as I write this at year end. If our reading is sound, any missed opportunity will seem sprat-like in the mackerel of a maelstrom. We care about our clients, and taking yet more risk off the table might seem overwhelmingly the obvious thing to do. But we hold with equal vigour to the principle that we are trying not to be wrong – which is not the same thing as trying to be right. Noah got it right, and well done him. His story rather glosses over the many months when he was laughed at for his initiative – it is not the laughter we fear; it’s pushing hard to be right and ending up being wrong. What we do is not a game.

Jonathan Ruffer

January 2019

Behind the illusion of stability

Henry Maxey – Ruffer's Chief Investment Officer – in conversation with a colleague. One long evening in December 2018.

Questioner: Henry, what's your thesis in a nutshell? For those short on time.

That the epicentre of risk in the financial system has moved. In 2008, it was leverage in the banks. Today, the equivalent risk is in the asset management industry.

A series of discrete interlocking factors have come together to make markets increasingly avalanche prone. There's an illusion of stability. Low volatility has lulled many to sleep.

We believe this will end badly – and are positioning portfolios to protect our clients from the avalanche.

Questioner: Why do you see stability as an illusion?

In part, because people are looking for risk in the wrong places. Or, more accurately, they're not looking for risk in the right places. A decade of emergency monetary policy – quantitative easing (QE), zero and negative interest rates – has distorted behaviour and perspectives. And it has facilitated a transfer of risk from the banking sector to the asset management sector. As a result, the risk today is less a consequence of leverage being applied to assets in a concentrated fashion. The risk is that leverage is, in effect, embedded in assets.

Second, and related, there's an illusion of stability because risk is widely underestimated. Take a portfolio of assets. If you assess the portfolio's risk through the prism of volatility – a prism distorted by the actions of central banks – then

you will be underestimating risk as monetary policy is tightened.

Third, any de-risking of portfolios will be concentrated in the most liquid markets. In these markets, machines dominate trading. If the machines withdraw liquidity in stressed markets – and the evidence suggests they will – then expect a sharp, rapid and discontinuous drop in asset prices. Supposedly liquid markets will show themselves to be dysfunctional.

Questioner: And this avalanche you mention – when is it coming? What triggers it?

A mountain side can be avalanche-prone long before the avalanche is set off. In the same way, a system can be unstable for a long time before failing. This makes timing predictions a fool's errand.

On the triggers, plenty of investors sense there are dangers and can identify some of the distortions. The tricky bit is seeing how the distortions link together, in ways that allow seeming stability to mutate quickly into instability.

I don't know which skier will set off the avalanche. Which event or action will cause the calamity. But I know US monetary policy and liquidity conditions are normalising, after an extreme decade. This is why an avalanche is coming.

It seems likely the trigger for the avalanche will be within the fixed interest market, but its immediate victim will be the equity markets, followed by the illiquid markets, whose illiquidity

will for a while disguise the fact that the values have fallen sharply.

Questioner: Is this all future? Or have you seen this start to play out?

In February 2018, products related to the VIX, a market volatility index, blew up. This had all the hallmarks of the real thing, but the broad markets held their nerve, and bounced back – it was close-run. In contrast, the very wide, and quite severe, falls in the markets since September have been pretty orderly. Yes, there have been specific flash points – Italian bonds in June, for example – but if we’re looking for evidence that the chaos has started, I would say emphatically, as we sit here near the end of 2018, that it hasn’t yet.

Questioner: Why haven’t overall equity and credit markets suffered much?

One school of thought is that it’s because the markets are robust, prevailing over monetary policy changes, resilient to turmoil in small pockets of excess. On this view, small shocks might even be welcomed, if they encourage the US Federal Reserve to stop tightening policy.

That’s one view. My view is that it’s more like the children’s game – What’s the time Mr Wolf? The Wolf has called time on some specific excesses. While the monetary tightening continues, we’re just inching closer to the point where Mr Wolf declares: “It’s dinner time!”

I believe it will be credit markets that ring the dinner bell. And, if you were to push me harder, I’d say it could be the withdrawal of Japanese investors from US credit markets that sets the bell off. The credit markets encapsulate the main risks I see, and they have experienced enormous inflows as a result of quantitative easing and zero interest rates.

Questioner: There’s lots to unpack there. But let’s wind back up. You’re saying asset management today is similar to banking in 2008, at least that’s where the risks are...

2008 was a vivid lesson in the dangers of financial leverage. When leveraged holders of assets are forced to deleverage, the resulting fire sales can quickly spread stress across the financial system. Falling asset prices beget falling asset prices. When it’s the banks that are overleveraged, as it was in 2008, then it quickly becomes a systemic issue.

In 2008, the key interrelationships were in the alphabet soup of structured credit. Mortgage backed securities (MBS), structured investment vehicles (SIVs), and collateralised debt obligations (CDOs). Combined with leverage from broker-dealers.

Back in early 2007, writing about our concerns, I opened with this –



“Anyone with a cautious disposition has a sense that there is fragility within the US centric financial world: too much debt, excess consumption, record deficits, carry trades, ubiquitous hedge funds, monstrous derivatives markets... Yet complexity in the interrelationships and instrumentation—”

Questioner: There’s a clunker. Interrelationships and instrumentation?

Bear with me.

“Yet complexity in the interrelationships and instrumentation confines most cautious commentators to broad statements about the obvious dangers that these symptoms present. The facilitating mechanism appears to be, to quote Churchill, ‘a riddle, wrapped in a mystery, inside an enigma.’”

The point then, as it is now, is that there’s a multitude of slightly distorting factors and actors that make the financial system fragile, not a single perpetrator.

Questioner: So there’s no one dominant villain.

Exactly. But this doesn’t suit human nature. Or the media, who want to point at who or what is to blame.

We read headlines saying X will cause the next crisis. Where X is variously: global debt levels; high-frequency trading; financialisation of volatility; China; dollar debt in emerging markets; heavily-indebted companies; growth in leveraged loans; exchange-traded funds with liquidity mismatches; negative interest rates; quantitative tightening; Bitcoin – the list goes on.

Now, all of these may have a part to play. The art is understanding the interactions. I express this in terms of loops. A loop is where a dynamic plays out in a way that reinforces things which have caused that dynamic to exist in the first place.

In the first instance, are multiple distortions linking together to create positive feedback loops, which can confound any caution? And then – where are the signs this could reverse, with positive loops becoming adverse?

The positive loops today support an illusion of stability. Think Roadrunner’s Wile E. Coyote. He flywheels across the chasm for a disarmingly long period of time. Then stops, momentarily. Before plummeting to the ground.

Questioner: If stability is an illusion, as you say, why aren’t the central bankers and authorities raising the alarm?

It’s partly human nature, partly institutional biases.

Jim Grant, the great market historian, contrasts science and finance. He’s fond of saying that in science, knowledge is cumulative. But in finance, knowledge is cyclical.

It’s a truism, rooted in human nature. Humans are riddled with psychological biases. And fight or flight instincts. These impair our abilities to invest well. We can’t seem to escape our primitive emotional wiring – and so we seem destined to make similar mistakes, time and again.

Each new market cycle brings a new flavour to the way in which investors lose money.

There’s a parallel unhelpfulness too. The bias of our institutions. The institutional bias in finance is to fight the last war – to react to each crisis with measures that try to stop that specific crisis recurring.

Questioner: The last war being 2008?

Yes.

Questioner: And this is giving a false sense of security?

It’s contributing. Shaped by 2008, investors and system watchers are always now on the lookout for build ups of leverage in the financial system. To many, the coast seems clear.

Those looking for comfort today might say there is no overleveraged player whose forced selling could cause a systemic shock. And, as economic fundamentals remain solid, there seems no reason to abandon the bull market.

They might go on to acknowledge there are pockets of concern – say the explosive growth of

the leveraged loan market – but nothing to give central bankers much to worry about.

Central bankers, in particular, seem comfortable that to the extent there is any mispricing in asset markets, the well-capitalised position of the banks means any resulting losses will be contained within the asset management sector. Painting the view with broad strokes: “Some people lose some money. But the payments system will be fine. And, by extension, the economy should not be threatened. Good fundamentals will win out”.

I think this has all the security of the Maginot Line. We can't be confident in the financial system based solely on the security of the payments systems. The banks may not become insolvent in the next crisis, but that might prove a pyrrhic victory for the system as a whole.

Questioner: If human nature and policy misjudgement are the problems, maybe technology's the answer? No emotions. Better programming.

That's a novelty of this cycle, the widespread application of technology to investing. Yes, it hints at the promise of something exciting – finance becomes like science, with cumulative knowledge.

Look at a complex game like chess or Go. If powerful self-learning algorithms can beat human experts at these games, then surely they can beat supposed experts in finance as well? Surely more computers in investing will lead to better returns and performance?

There's no shortage of promises. Or of tech-based financial innovations. From algorithmic and systematic trading to factor investing to exchange-traded funds and roboadvisers. They all offer tantalising hope. And I think tantalising is the key word here – it gets us very close to the truth.

Tantalus was made to stand in a pool of water beneath a fruit tree with low branches. The fruit



ever eluded his grasp. The water always receded before he could drink.

This picture from Greek mythology – a dual illusion of wealth and liquidity – sheds light on finance today. I believe we're in the throes of discovering that the rapid replacement of man by machine within markets over the past decade has made our industry more cyclical, not less.

Questioner: Let's come back up to the big picture. Illusions of stability, avalanche-prone markets. What's your argument built on?

If I had to answer in tweets, I'd offer four –

- 1 Going to zero interest rates matters; it is different this time.
- 2 Liquidity is *the* fundamental; it is declining.
- 3 Volatility cannot be an asset class and a measure of risk simultaneously.
- 4 There's a dangerous assumption of continuous liquidity.

Questioner: Your first tweet has those infamous words, "It's different this time." Words that have destroyed many a fortune.

Indeed. But it's zero and negative interest rates that make all the difference. This is new this time.

After the credit crisis, emergency monetary policy allowed the banks to de-risk their balance sheets smoothly, by supporting asset prices. But

these policies also robbed safe assets of any return. Savers and investors seeking income were forced elsewhere, from safety to riskier assets, such as corporate credit and equities.

You've probably noticed this, perhaps in your own behaviour, or in the behaviour of friends. Why hold much money at the bank when interest rates are non-existent? Many of us have been tempted by that corporate bond fund, or that high-yielding product, advertised in the money section of the weekend papers.

I've got a chart in my bag that reveals the shape of this behaviour (see Figure 1 at the end of this document). It shows how lower rates influence asset allocation decisions. This matters, because it suggests rising interest rates could inflict much more damage on risky assets than they have in previous market cycles. Supposedly-safe equities, and bonds of conservatively-run companies, are firmly in the risky and vulnerable bucket.

Questioner: Why?

Because there should be much more selling of risky assets in this cycle, as US interest rates rise from 0% to, say, 3%. Compared with in previous cycles, when rates were rising from, say, 4% to 6%.

My hypothesis is that as interest rates rise, people won't reduce their risky assets in a smooth fashion. Rather, they'll wait until risk-free rates are high enough, and the performance of their risky asset unnerving enough, to jump back to the risk-free asset, when the opportunity cost feels small.

In caricature, why hold an investment grade bond ETF yielding 3.8% when you can hold a US government bond of the same duration yielding 3%? The extra yield isn't enough to compensate for the risk of further losses.

I asked Yueran, one of the authors of the study behind the chart, whether there was any empirical evidence to support my 'jump to risk free' hypothesis. She said while they haven't tested this proposition precisely, they have observed some results which are supportive of the idea.

There's another reason people exit positions which perhaps they never should have entered into in the first place – that's when there is a sudden rush to the exits by others. This can unsettle the mind (why do others want to get out?) – and settle it at the same time – so they sell.

Questioner: Are there other ways zero rates make it different this time?

They create a conflict, one that links again to human nature.

Think about home insurance. Most of us are happy to pay the annual premium, because we can't bear the thought of our home burning down. The loss of the premium is known, and small, relative to the insurance pay-out if there's a fire. Most of us like these payoff profiles, because we tend to be risk averse.

The notable thing about the current cycle is that zero interest rates have created an opposing force – a force that goes against the grain of people's inclinations. In this cycle, investors are short of income, and paying out for insurance has come to be seen as an unnecessary expense. Why suffer this certain cost, when the likelihood of the house catching fire in, say, the next three months seems almost non-existent? For fund managers in a low-return, fee-sensitive and fiercely-competitive environment, portfolio insurance can feel like just too much of a drag on performance.

From here, it's just a small step to becoming a seller of insurance. Instead of paying out, why don't I put myself in the position of receiving that income stream, that insurance premium? I can bank it as income, and there's almost no chance of having to pay out. The consistency of the income stream makes it feel like a conventional fixed income investment.

Some have chosen this route consciously. But many more are pursuing it unwittingly, under fancy terms – like risk-premia investing – or in fancy products, like autocallables. Underlying that, investors in these products and strategies are selling options, in effect selling insurance.

A Swiss wealth manager summed this up well. He told me about clients who vowed never to

own hedge funds which sold options – because they had been deeply scarred by previous losses. Yet these very same clients are lapping up risk-premia investing – which does exactly what those hedge funds did. It's been rebranded. Immaculately back tested. Supported by academic research. And the clients are now back doing the same thing they'd vowed not to do.

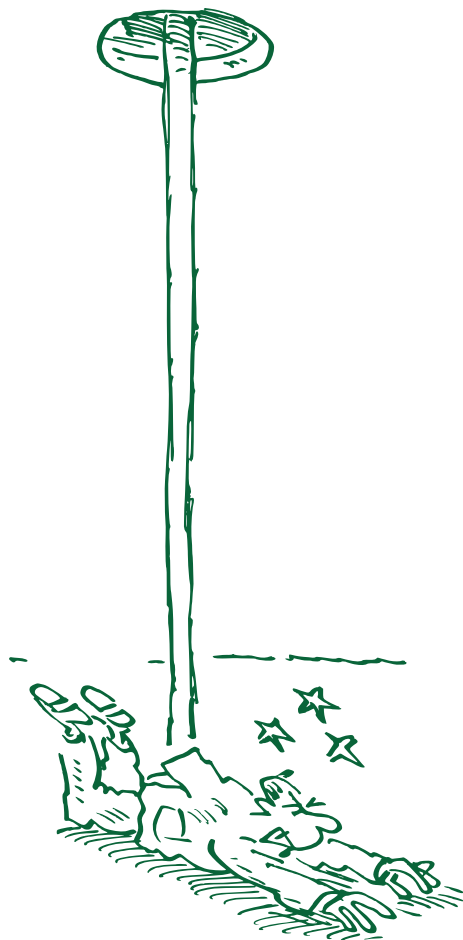
Questioner: That's Jim Grant again – cyclical knowledge, not cumulative knowledge.

Perhaps Tantalus too.

Either way, the key point here is that yield hunger has swamped risk aversion.

At Ruffer we are swimming in the opposite direction, spending good money – clients' money – to insure against things which many think vanishingly unlikely.

The insurance is mispriced – mispriced in two ways. It is too cheap because the natural buyers are trying to save the money to preserve their income. But it is also mispriced, because the



pay-off will be, in our view, substantially higher than people expect. That was one of the insights from the VIX crisis in February. The crisis was aborted, but the VIX index still reached a level that many thought would not be reached unless there was a full re-run of 2008 conditions.

Questioner: Let's move to your next tweet – liquidity is the fundamental; it is declining.

Most of us assume, quite reasonably, that it's the fundamentals rather than the financial technicals that matter most. By fundamentals we're talking about things like the strength of the economy and company earnings.

Unfortunately, the dominance of finance in the modern developed economy has tipped the balance. It's now recognised that monetary policy works primarily through its influence on financial conditions, which are derived principally from the dynamics of equity and credit markets. Therefore, when it comes to ending a policy era which relied on huge monetary stimulus from central banks, it's not over-the-top to say liquidity is the key fundamental.

This puts the US Federal Reserve in a very difficult situation. Because their policy changes influence liquidity conditions in myriad ways.

Given its mandate and models, in the context of a strong economy at around full employment, the Fed has to continue tightening monetary policy until financial conditions tighten. Sensing the dangers, it characterises its current tightening as gradual and dependent on how the economic data evolve. As one of the Fed's Vice Chairmen put it recently, this is like "being in a dark room without your shoes on. You want to go slow so you don't stub your toe".

This is a directionally helpful image, but it doesn't capture the reality. It implies that any overstep in policy can easily be reversed with a simple step back and an Elastoplast. But if liquidity conditions have become more fragile, as we think they have, then a better characterisation is that it's like walking in the dark on the third floor of a fire station. You have no idea which step is going to send you straight to the

ground floor. And, if you survive the fall, it's a long climb back up the fireman's pole.

Questioner: Where are those dark holes?

One example. I see a risk of a run on bond funds. There is evidence to suggest investors tend to sell these funds in response to poor performance. What's more, the selling tends to be more extreme when the underlying assets are perceived to be illiquid.

The pattern is similar to the dynamic of a bank run. Whatever your belief about the quality of the assets in the fund, your dominant strategy is still to sell the fund, in case others do so before you. You don't want their selling inflicting damage on you – because the remaining illiquid securities in the fund price down sharply. Rather than take that chance, you sell.

This is not confined to individual funds. Any perception of widespread outflows from Corporate Bond Fund A could trigger selling of Corporate Bond Funds B through to Z.

The gating and liquidation of GAM's absolute return bond funds in August was illustrative. The perception of illiquidity meant that the fund had to be closed and liquidated in order to treat underlying clients fairly. It was a binary event for a \$7.2 billion strategy, albeit one where a sense of compliance irregularities added urgency to the fundholders' desire to redeem.

Combine any run on bond funds with the possibility that people might already be inclined to jump out of riskier bonds at higher nominal interest rates. That provides the context for a bumpy ride in fixed income markets as monetary policy continues to tighten. The tinder is dry.

Questioner: Can we drill into that – what does this look like in the corporate bond market, corporate credit? You said earlier it's credit markets that ring the dinner bell for Mr Wolf.

The US investment grade credit market is now around \$7 trillion. It's tripled in size since 2008. Inflows have been vast, and yields have compressed.

When inflows into an asset class are overwhelming, fund managers have no choice but to accept the terms offered – they are price takers. If they resist, they will increasingly become a cash fund, when investors are looking for a bond fund. This insensitivity to quality and price is made worse when the inflows are generic. By generic I mean when investors seek general exposure to an asset class – as opposed to specific exposure, or actively-managed exposure.

Generic exposure – through cheap passive funds and ETFs – has become more popular in a low-yield world. The logic is clear: Why pay more for an active bond manager who struggles to outperform the index in the long run? Particularly if these managers will also struggle in the short term, when inflows are strong.

Questioner: If these buyers are less sensitive to price, are they less interested in quality as well?

I'm not sure I'd say less interested in quality. At least not consciously or explicitly. But quality in this market has certainly nosedived. I've got some stats on my laptop, if you can give me a minute...

These numbers are for the US investment grade bond market, excluding financials¹.

The share of the market rated BBB – that's the lowest credit rating still considered investment grade – hit 48% in 2017, from around 25% in the 1990s. If ratings were based on leverage alone, 45% of this investment grade debt would actually be below investment grade – aka junk.

Back in 2010, only 6.6% of this market had net leverage greater than 4.0 times earnings – a level of borrowing considered high by historic standards. By 2017, that share had increased to 19%. Also by 2017, only 26% of the market was leveraged less than 2.0 times, compared with 55% in 2010.

This nosedive in quality matters for financial stability – because so much more of the debt is on the threshold of junk.

One downgrade from BBB to junk and the price

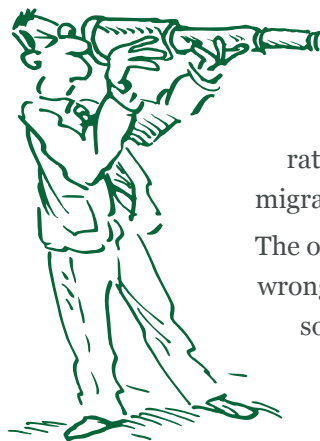
¹ Source: PIMCO, 'Investment Grade Credit: Be Actively Aware of BBB Bonds', January 2018

of a bond will fall materially. If the market anticipates many downgrades, then the price changes could be much greater than past experience would suggest.

The recent experience of GE is eloquent in this respect. Its two-notch downgrade to BBB+ created ructions across credit markets.

Because the size of the BBB market dwarfs the high yield market, downgrades could exacerbate liquidity challenges. What's more, the duration of the bonds in the investment grade market has increased, and interest rate volatility has decreased. In bond maths, both of these features increase the sensitivity of bond prices to increases in interest rates.

Now, if you judge risk purely through the lens of price volatility – as much of the asset management world does – then, at least until recently, risk appears to have decreased rather than increased. I'm arguing the opposite – that the intrinsic riskiness of the investment grade bond universe has increased substantially.



Questioner: This all feels very bearish. What's the case against you?

None of what I've said about the credit markets is a breakthrough insight. Others are highlighting similar things in cautious commentary.

The GE shock has already caused credit to sell off and credit spreads to widen sharply. Recession fears have, as a consequence, been amplified.

Now picture a more optimistic investor, a few weeks from now. Say it's New Year's Day, and the investor is looking out at 2019. This investor could, quite logically, see the fears as overstated. They could identify fundamental support in favour of investment grade bonds. For example, the US economy is robust. Interest rates, while rising, may not rise so much as to unhinge very

healthy interest coverage on the debt. And, if interest rates are going to remain low structurally – because inflation is permanently subdued – then high-quality companies should be able to support more debt.

In other words, to justify current pessimism, we need financial dislocation to drive fundamentals down.

In a dislocative investment world, the US and other economies will turn down decisively and immediately as they did in 2008. In those circumstances, it is perfectly possible that the other bull argument – that interest rates are structurally low – will prove to be correct. But in the light of a sharp downturn, this will be a sideshow. And our expected policy response – fiscal reflation – could see inflation forcing interest rates up again. This heady cocktail will cause migraines.

The optimist might say I'm looking through the wrong end of the telescope. That's not an unreasonable view to take – in a static, structural, and fundamental sense. The trouble though can be summed up in one word – liquidity.

Questioner: And your tweet said liquidity is declining. That's the trouble?

Yes. Liquidity is deteriorating at a macro and a micro level.

Questioner: Let's take the macro first.

Central banks are now withdrawing liquidity from the markets. In the US, the Federal Reserve is engaged in progressively-greater quantitative tightening. In the eurozone, it's progressive tapering of quantitative easing. In Japan, there has already been stealth tapering by the central bank, with monthly purchases of bonds significantly lower than the headline level of QE. This provides a strong headwind for credit and equity markets.

From another angle, consider the huge volume of debt known to be maturing in the US investment grade bond market over the next few

years. Jumping from \$26 billion maturing in 2018, to more than \$600 billion in 2019, and on to just over \$700 billion in both 2020 and 2021.²

Say rising short-term interest rates and underperforming credit funds do encourage investors to jump back to risk-free assets, such as cash and short-term government bonds.

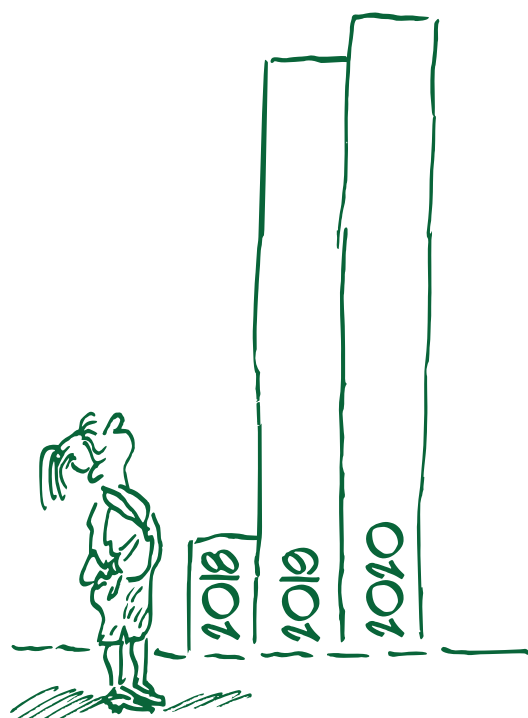
If this leads to material selling of corporate bonds, then it will force companies to pay higher yields to roll-over the debt. This is not good news given 2019's mountain of maturing bonds.

Questioner: And the micro?

At the micro level, liquidity conditions are not improving either. There is a proliferation of bond mutual funds and ETFs that offer daily liquidity. But the liquidity of the underlying bonds is materially worse. This liquidity mismatch increases the risk of a run on these bond funds.

Then there's the changing role of bank broker-dealers. Post-crisis regulation makes it harder and costlier for them to warehouse large quantities of bonds on their balance sheets. As a result, they will be much less effective as shock absorbers than they were in the past.

Finally, it's unclear how the presence of ETFs will impact liquidity if outflows suddenly



² Source: Goldman Sachs, 'The Credit Finder', 13 December 2018

increase. My suspicion is that the mechanics of the ETF creation/redemption process could make liquidity issues much worse during acute periods of selling.

Questioner: You said earlier that it's a multitude of factors interacting that creates fragility in the system. Not one single perpetrator that fits neatly into a headline. But what you've just said makes declining liquidity seem like the villain.

It's not liquidity alone. I had drafted another tweet, which I deleted from my list. It said: amplified convexity in the presence of declining liquidity is the new leverage.

Questioner: Amplified convexity?

In an asset, convexity refers to the payoff profile. Expressed very roughly, amplified convexity means a bigger move in price – up or down – for an equivalent move in the underlying driver of the price. The bang is greater than the buck.

It's the multitude of factors coming together that make this convexity amplified.

Again using the example of US investment grade credit, it's the coming together of factors such as the huge volume of debt on the threshold of junk, higher bond duration, higher interest rate volatility.

Against that backdrop, the effect of quantitative tightening and rising rates on liquidity is unlikely to be neat and tidy. Declining liquidity, in the context of amplified convexity, is likely to lead to adverse feedback loops of various kinds.

Here's just one of those loops. At the broad level, widening credit spreads lead to tighter financial conditions. Tighter financial conditions create economic headwinds and more volatile asset prices. The economy slows, increasing expected defaults in credit. Higher expected defaults lead to downgraded credit ratings. This reinforces a widening in credit spreads – and takes you back to the beginning of the loop.

If the economy has a lot of positive momentum, it is possible that strong performance by companies can stop the adverse loop from propagating. However, it's when the economy is losing

momentum, at the end of a cycle, that there's the greatest risk of adverse feedback loops.

These loops – in the context of convexity and illiquidity – mimic the effects of high leverage in the system. They force a de-risking of portfolios, as portfolios have to adjust to the realisation that they are much riskier than their risk optimisation models suggested.

Questioner: These models, most of them are based on volatility. Your penultimate tweet said: Volatility cannot be a measure of risk and an asset class simultaneously.

It's not controversial to say that volatility of asset prices is a poor measure of risk. The banking sector learnt that lesson 20 years ago. So why does the asset management industry place so much emphasis on volatility in risk management?

After the losses suffered in 2008, both regulators and investing clients began fixating on risk management and risk categorisation. Naturally, the industry responded by developing its risk management capabilities. The underlying models took traditional portfolio theory as its cue – with a focus on risk versus return, where risk is measured as ... volatility.

At its worst, this is like the old joke about the drunk who searches for his car keys under the street lamp. When asked if he lost them there, he replies “no, but it's where the light is”. The industry uses volatility because it can be easily measured with just two variables, price and time. Even if the keys to intrinsic risk lie elsewhere.

Questioner: That's volatility as measure of risk. What about the volatility-as-asset class part?

This cycle has seen the proliferation of investment strategies that treat volatility as an asset class in its own right.

At zero interest rates, these strategies provide an alternative, seemingly low-risk, means of hitting a nominal return target. And with quantitative easing

crushing volatility across assets, the strategies have worked tremendously well.

As always, flows of money follow good performance. These flows suppress both realised and implied volatility.

Until February 2018, you could invest in a fund called XIV – a play on measured volatility through the VIX. It amassed \$2 billion before disintegrating. And, as we heard from our Swiss wealth manager friend, investors have been buying products with a variety of labels that are selling volatility, in effect selling insurance.

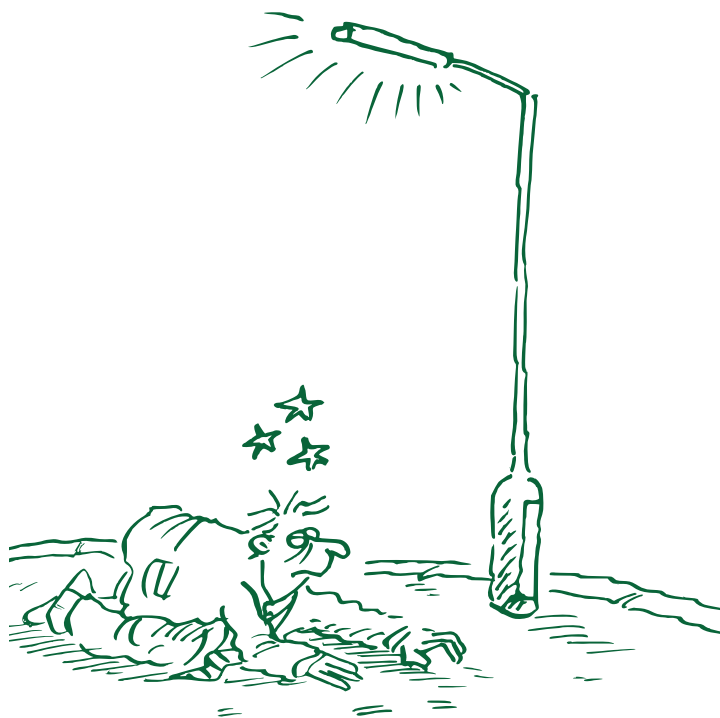
Given a long enough investing horizon, the theory is that the volatility risk premium, as it is known, can be harvested in a number of different ways across different asset classes. In short, it pays to be a seller of insurance in the long run.

I don't dispute the history validating this. The research is incontrovertible. My concern is that volatility looks like a textbook example of Goodhart's Law.

Questioner: And Goodhart's Law says ...?

When a measure becomes a target, it ceases to be a good measure.

There's a problem for the asset management world as a whole here. It causes portfolios generally to appear with much lower risk – based



on volatility – than they might otherwise do. It encourages investors to load up portfolios with much higher levels of intrinsic risk.

I've focused on this effect through the narrow prism of the US investment grade bond market. That's just one example. There's a real danger that the interlocking nature of markets spin outwards and compromise other parts of the system. That's not a surprise: close off the M1 and it's not long before the A1 is gridlocked.

Questioner: Let's move to your final tweet – there's a dangerous assumption of continuous liquidity.

This needs a bit of a run up.

The past decade of monetary policy has encouraged those with longer investing horizons to allocate more of their portfolios to illiquid asset classes. Private equity, venture capital, infrastructure, private lending and the like.

The rationale is that those with longer investing horizons – pension funds, endowments – should harvest the illiquidity premia that are available in illiquid assets over the long run. For funds that have nominal return targets, typically around 7% a year, illiquid assets provide the prospect – based on historical performance at least – of much higher returns. What's more, illiquid assets don't get priced as frequently as publicly-traded assets. Because pricing is less frequent, the risk of the whole portfolio, when measured by volatility, also appears to be lower. In truth, actual returns in these illiquid asset classes could be significantly lower than predicted – but that's a conversation for another day.

The relevant issue here is linked to de-risking. Any de-risking in portfolios full of illiquid holdings has to be focused – where?

Questioner: On the liquid part, the easier-to-sell holdings.

Spot on. And if, as I expect, credit markets gum up, selling pressure will migrate to the most liquid areas of capital markets, notably equities.

This takes us back to technology. The machines have taken up residence in the most liquid

markets because they feed off liquidity for their profitability. In US equities, the algorithmic trading share of the market is now greater than 70%.

In stressed markets, this is a big problem, because the machines are programmed to switch off if markets start behaving strangely. It means liquidity in key markets is only reliable in normal market conditions.

What happens if investors collectively feel the need to cut risk from their portfolios? Perhaps triggered by a realisation that their portfolios are actually riskier and more illiquid than they thought.

Selling may be forced into the supposedly most liquid markets, such as US equities. Liquidity could vanish. If it does, there is a real danger these major markets could fall quickly and sharply – they gap lower.

Questioner: And why is this assumption of continuous liquidity dangerous?

This assumption is key to the functioning of markets, because it's how traders and investors manage their risk and hedging. Investors rely on the liquidity of markets to perform a 'just in time' de-risking of their portfolios.

But when liquidity vanishes, it will expose another major frailty in asset management: too many people are short gap risk. In other words, they are exposed to the risk that they cannot trade out of their assets as prices fall, because the price rapidly jumps – or gaps – lower.

While the machines won't necessarily cause a crash, they'll be a link in the chain facilitating one.

Questioner: To wrap up – what's a prudent investor to do?

Expect an avalanche. And clamber on to different ground – a ground where real protection costs real money and can make real money.

Our portfolios are built with the aim of keeping our clients safe, to perform well in a sharp market dislocation, and to allow us to profit from the opportunities a dislocation will bring.

Figure 1 – Asset allocation and risk-free rates

The chart here is from a recent experiment by Yueran Ma of the University of Chicago and Wilte Zijlstra from the Dutch Authority for the Financial Markets. It shows how much people choose to allocate between a risky and a risk-free asset (vertical axis) as the nominal return on the risk-free asset falls (horizontal axis).

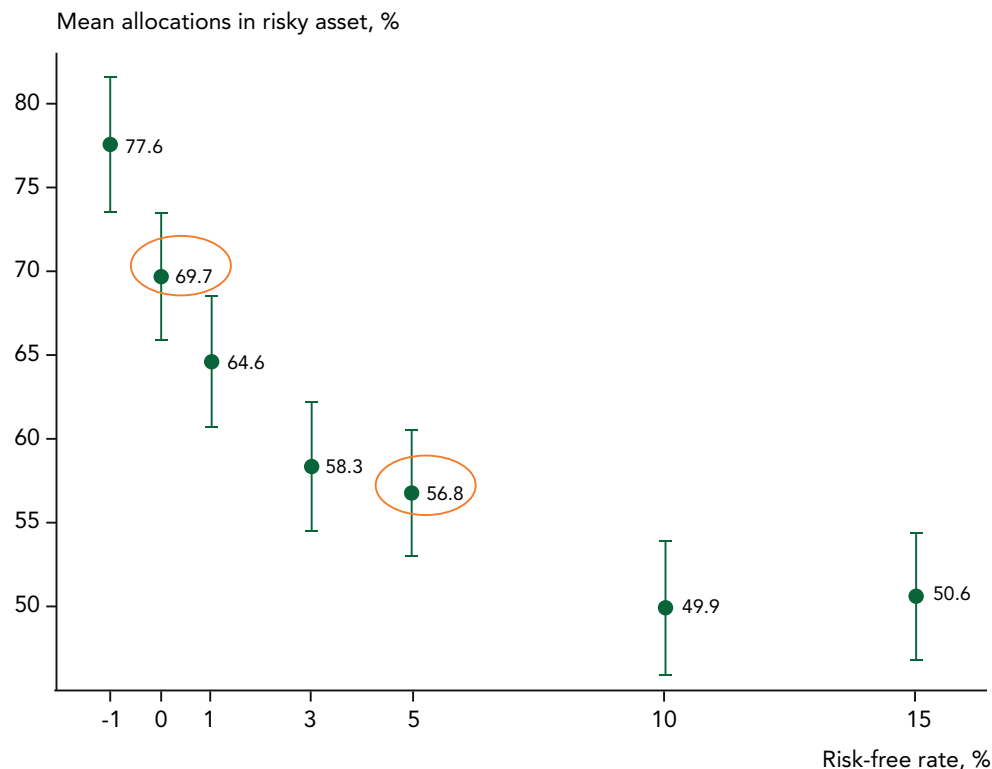
Note, the real (after inflation) return on the risk-free asset remains constant. It is only the nominal interest rate that changes.

The experiment was set up so that if people were perfectly rational, the line on this chart would be flat. Put differently, perfectly-rational investors would leave their allocation to risky assets completely unchanged at different levels of nominal return.

What we actually see is people increasing their exposure to risky assets as nominal interest rates tend towards zero – and they do this in

a non-linear way. When the nominal risk-free rate was set at 5%, the mean allocation to the risky asset was 56.8% of the portfolio. When that risk-free rate reaches 0%, the mean allocation to the risky asset rises to just short of 70% of the portfolio.

This implies that people think in terms of nominal returns, as opposed to real returns. The cause is both contractual and behavioural. Contractual, because many institutional investors, such as pension funds, have nominal return targets for their portfolios. Behavioural, because of psychological biases. One such bias is reference dependence, where we get used to a particular level of nominal income from our savings, and we try to preserve this when interest rates fall. Another bias is linked to salience – nominal returns are visible, while real returns are not. We tend to work off what we can see.



Source: Yueran Ma, Wilte Zijlstra, March 2018
voxeu.org/article/new-take-low-interest-rates-and-risk-taking

Past performance is not a guide to future performance. The value of investments and the income derived therefrom can decrease as well as increase and you may not get back the full amount originally invested. The value of overseas investment will be influenced by the rate of exchange. The information contained in this document does not constitute investment advice or research and should not be used as the basis of any investment decision. References to specific securities are included for the purpose of illustration only and should not be construed as a recommendation to buy or sell these securities. Ruffer LLP is authorised and regulated by the Financial Conduct Authority. © Ruffer LLP 2019. 80 Victoria Street, London SW1E 5JL, UK. ruffer.co.uk