

# The Ruffer Review 2019

## On starlings and casinos

*Andrew van Biljon*

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## Make America Inflate Again

*Jamie Dannhauser*

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“THE BREEZY CERTAINTIES  
OF THE POST-COLD WAR  
CONSENSUS ARE GONE.”

*Alexander Chartres*

PAGE 8

## Behind the illusion of stability

“I believe it will be credit markets  
that ring the dinner bell.”

*Henry Maxey*

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## Going for a Song

The story of a bond

*Zhiran Li*

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## John Law

“Easy money has many consequences,  
some of which in the short-run are  
rather pleasant.”

*Edward Chancellor*

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## Natural capital

Why investors  
should care

*Alexia Palacios*

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“ It wasn’t until the seventeenth century that paper currency was widely adopted in Europe, more than 500 years after China”

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*Zhiran Li*

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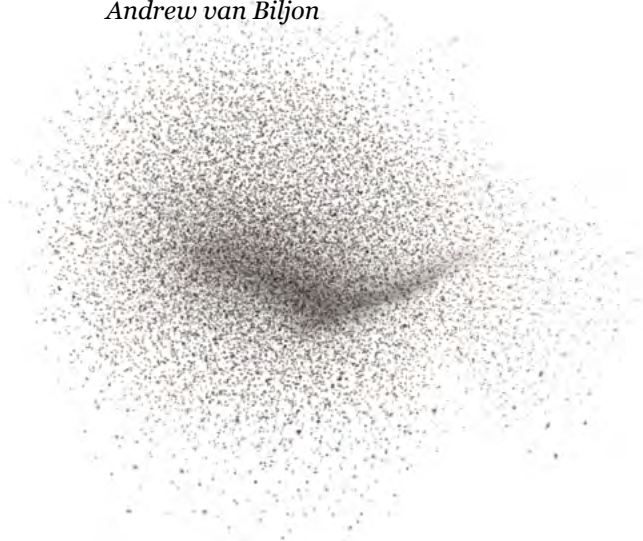


## CONCEPTUALLY SPEAKING



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## HISTORY'S RHYME



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# Foreword

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**JONATHAN RUFFER**

*Chairman*

**THE RUFFER REVIEW IS A NEW IDEA**, an offset to the megaphone messages of my quarterly investment reviews. Its tone is more dinner party than party manifesto.

This is the first edition. All being well, we'll produce it annually.

Worth a read is our look at the geopolitical cabaret, courtesy of Alex Chartres. It is often said that, when confronted with uncertainty, we all revert to the mean. Alex suggests the emerging world order would be familiar to our forebears: mostly seventeenth and eighteenth century geopolitical actors engaging in nineteenth century Great Power politics, overlaid with a twentieth century-style superpower tussle.

Shortly afterwards comes Henry Maxey's view of the world. His views are best taken with milk of magnesia.

Elsewhere there are articles on John Law, 1960s US inflation, traffic jams and the murmurings of starlings, and the concept of natural capital. Rounded out with thoughts on three books I've not read, and the story of a fourteenth century Chinese banknote in the Ruffer collection. Finally, it seems Clemmie Vaughan must be the one in charge around here – while I get the foreword, she gets the last word.

The Ruffer Review has three things in mind. It is designed to entertain and inform. Its undercurrent message is that Ruffer is a team of thinkers, not a painted name over a wooden door. And if there's a pattern in these pieces it is that the key to the future lies in understanding the past – a necessary but not sufficient ingredient in our investment judgement.



# A new world **dis**



# order?

**WORLD ORDER ENCOMPASSES EVERYTHING: IT IS A NEGLECTED DRIVER OF LONG-TERM RETURNS. WHAT MIGHT TODAY'S TECTONIC SHIFTS MEAN FOR INVESTORS?**



**ALEXANDER CHARTRES**

*Investment Manager*

**GREAT POWER CONFLICT** has been rendered obsolete by the relentless advance of globalisation, material prosperity and the triumph of reason. So argued Norman Angell in *The Great Illusion*, published in 1910.

Four years later, World War I exploded out of thin air. It began what Marxist historian Eric Hobsbawm described as the “short twentieth century”, which ended with the fall of the Soviet Union in 1991.

To latter-day Angells, the end of the Cold War heralded a similar “end of history”. The great matter of human political order had finally been settled. Liberal, market-friendly, capitalist democracies were in. Militarism, central planning, borders and totalitarianism were out. We had reached

the last stop on the line of political and economic evolution.

During the short twentieth century, the tumult in world order proved ruinous for many investors. By contrast, the post-Cold War era – historically peaceful, supportive of (broadly) free trade, open markets and capitalism – has been exceptionally benign. World order has been stable for a generation, long enough to take for granted.

But the current system is not so much a self-sustaining rational construct as the product of Western – especially American – power. It is not the default option. World order is now changing fast, and not necessarily to investors' advantage.

## UNDERSTANDING AN ERA

Why has this world order been so benign?

Our story begins in the early 1980s. Inflation and interest rates began falling, underpinning a Golden Age of Capital. For nearly 40 years, assets from equities and bonds to art and classic cars have delivered substantial real returns. Buy and hold – with some teeth-gritting in bear markets – has worked.

Two tectonic shifts in world order have shaped this era: the (re-)emergence of China, and the end of the Cold War. China and the former USSR added massive new productive capacity to global markets. If you add India – which began dismantling its regulatory Licence Raj in 1990 – the three blocs added nearly half the world's population to global markets in the historical blink of an eye.

US President George H W Bush heralded a “new world order”, in which American power would secure the world for capitalism, markets and democracy.

Great Power conflict was over, and defence spending – often inflationary

– plummeted. A peace dividend freed funds for more productive ends. Rapid technological advances – particularly in computing power, communications and the internet – enabled businesses to take full advantage of the increasingly open world order. These political and economic shifts delivered an economic boom, lower inflation and unprecedented international peace and stability. Higher returns to capital followed.

President Bush was realising an American dream dating from the foundation of the Republic. On the 1782 Great Seal of the United States, beneath the unfinished pyramid, runs a proclamation: *Novus Ordo Seclorum*, a new order of the ages. The proclamation's author, Charles Thomson, saw this as “the beginning of a new American Æra”. Hovering over the pyramid, the eye of providence casts its shimmering approval. Bush Senior was involved perhaps more than anyone else in cementing the US-led world order as the Cold War ended. The pyramid reached higher. His recent death comes just as the order he championed faces its own existential questions. The pyramid remains unfinished, and under renewed threat.



# Conflict Power Great

Back to the 1990s, and dangerous currents are building. As capital chased higher returns in emerging markets, upward pressure on local currencies grew. Policymakers resisted, to keep exports competitive. Holding exchange rates artificially low, they recycled money back into global markets – especially US Treasuries and other dollar debt.

These price-insensitive purchases pushed down bond yields in the developed world. This drove both hunting and borrowing. Hunting on the part of income-hungry investors, who went seeking income elsewhere, including in the sub-prime securitised products that were at the epicentre of the Great Financial Crisis. Borrowing across the developed world, by households and governments. Much of this borrowed money flowed back into emerging markets, chasing returns and cheap goods. Which put upward pressure on emerging currencies. And so the cycle continued.

In this world of greatly expanded supply, inflation was naturally lower. But rather than adjust their newly minted inflation-targeting regimes for a world of disinflation - as opposed to inflation - Western central bankers kept monetary policy inappropriately loose, encouraging higher asset prices and more debt.

At least two asset bubbles inflated: dotcom in the late 1990s, and the Credit Crunch in the mid-2000s. With each crisis, interest rates have been cut to new lows, creating fresh credit and asset bubbles, and encouraging further debt and fragility. When rates hit zero in the late 2000s, unconventional measures such as quantitative easing were used. Interest rate distortions rippled through the financial ecosystem. Risk became widely mispriced,

as our Chief Investment Officer Henry Maxey details elsewhere in this review. After a decade of extreme monetary distortions, it is likely that we are now in an ‘everything bubble’.

## SHIFTING SANDS

What of the political climate in the West? The wealthy becoming wealthier. Decades of slow growth in wages. Austerity and debt. Distortions within the eurozone. Backlashes against migration. And the effects of globalisation, notably the hollowing-out of traditional industries – and communities with them. These pressures are reshaping the political landscape, and they are doing so well beyond Brexit.

In 2000, European populist parties garnered around 8% of general election votes. In 2018, that figure was 27% – and rising.<sup>1</sup> The collapse of the political centre across the West increases the breadth of possible governments and policies. Since populist parties often have radical economic agendas, the key danger for investors is that a political backlash will deliver a less stable, predictable and open world. A world of materially higher taxation, inflation and regulation. Despite Western governments’ straitened finances, demands for public spending are likely to grow, rather than diminish. (And if we are in another bubble, its collapse will create further political instability).

The shifting sands of domestic politics will also impact central banks. It remains to be seen whether they can maintain their independence in a more partisan era. President Trump’s trolling of the Federal Reserve suggests no one is safe. Since central bankers have backstopped asset prices for 30 years, a generational shift in

market thinking may be needed. It seems likely that central bankers will ultimately be called upon to square the circle between demand for additional public spending and over-indebted governments. The net result? Deeper financial repression. Bad news for fiscally responsible savers.

Internationally, the stability provided by an American hegemon is eroding. Other Great Powers are (re-)emerging, challenging the norms of the existing order. It has become something of a cliché to proclaim a return to nineteenth century Great Power politics. This is a partial truth. Yes, America’s unipolar moment has passed; in its wake follows a host of competing powers, China foremost amongst them.

But the nineteenth century did have a hegemon: the United Kingdom. While never achieving the equivalent of America’s 1990s hyper-power status, Britain anchored the global system within Europe by supporting a balance of power, and beyond Europe through control of the oceans. Like America, it was broadly capitalist, market friendly, liberal and pro-trade.

The nineteenth century’s other Great Powers were predominantly Western. Rapid industrialisation created an enormous divergence in wealth and productive capacity, which enabled the Western-led order to dominate most of the rest.

The world order re-emerging is older. Today’s challenger states bear striking resemblance to the great contiguous land empires of AD 1700: Qing China, Mughal India, Peter the Great’s Russian Empire, Safavid Persia (Iran), and an Ottoman Empire centred on Turkey. European nations were thrashing it out like ferrets in a sack. Each civilization had very different ideas about how to order society and the



# Reshaping

# the political

# landscape



world around it. China and India together accounted for a much higher share of global output than they do today. On a per capita basis, the economic world order was more level.

The breezy certainties of the post-Cold War consensus are gone. World order is in flux, and it's all to play for.

Investors need to take note. The market impact of Cold War II: *Chimerica* is already being felt. The imposition of (inflationary) tariffs on trade. The blocking of Sino-Western technology deals by Western governments on national security grounds. Efforts to secure strategically important supply chains will accelerate – especially for technology. Perhaps, in time, new economic iron curtains will force countries to choose sides, notably in South East Asia. These shifts will create winners, as well as losers.

## **PROTECTION WILL BE CHALLENGING**

So politics, nationally and internationally, is becoming more volatile. At the same time, many of the decades-long economic tailwinds are turning into headwinds. The Golden Age of Capital may be coming to an end.

The positive supply shocks of China's re-emergence and the end of the Cold War are fading. The technology revolution continues apace, but the low-hanging fruit (offshoring, cutting out middle men) seems to have been picked – and eaten. Might even the internet become inflationary with greater regulation and balkanisation? Ageing looks set to encourage spending rather than saving – this creates new opportunities but perhaps also more inflationary pressure.

Robust global growth has helped to disguise some of these challenges –

# the emergent order looks increas- ingly disordere

particularly record indebtedness and asset prices – and inflation still remains becalmed.

So, what happens next? As Jamie Dannhauser describes elsewhere in this review, 1960s America may offer an indication: a period of strong growth, low unemployment and little inflation, followed by a period of significantly higher inflation. Interest rates had to rise sharply to contain the inflationary threat. Volatility shot up.

For investors, protecting against higher inflation, rates and volatility will be challenging. Conventional assets are already richly valued – on the assumption that inflation, rates and volatility will remain low. Bonds and equities could fall together, and sharply. This would mark another regime change: unusually, US stocks and bonds have been negatively correlated for 20 years. Over the very long term the correlation has been modestly positive. For those seeking to preserve capital, an historical reversion to the mean would make conventional portfolio diversification potentially less effective than it has been in recent decades.

1970s Britain offers a warning. Neither conventional bonds nor equities protected against the sudden increase of both inflation and interest rates. Investors endured up to 15 years of losses in real terms. And that's before punitive rates of taxation are factored in.

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Source Image: Sipa / Shutterstock

## REGIME CHANGE

After an era of unprecedented stability, the emergent order looks increasingly disorderly, fragile and ultimately inflationary. This is a world in which record debts, strained government finances and high asset prices meet the retreating tide of central bank stimulus and authority, reduced market liquidity, resurgent Great Power politics and populism. Such a world leaves policymakers with big decisions, big debts and little wriggle room.

Long-term investors need to pay renewed attention to politics – both foreign and domestic – in a way they have not for a generation. ●





# A market miscellany



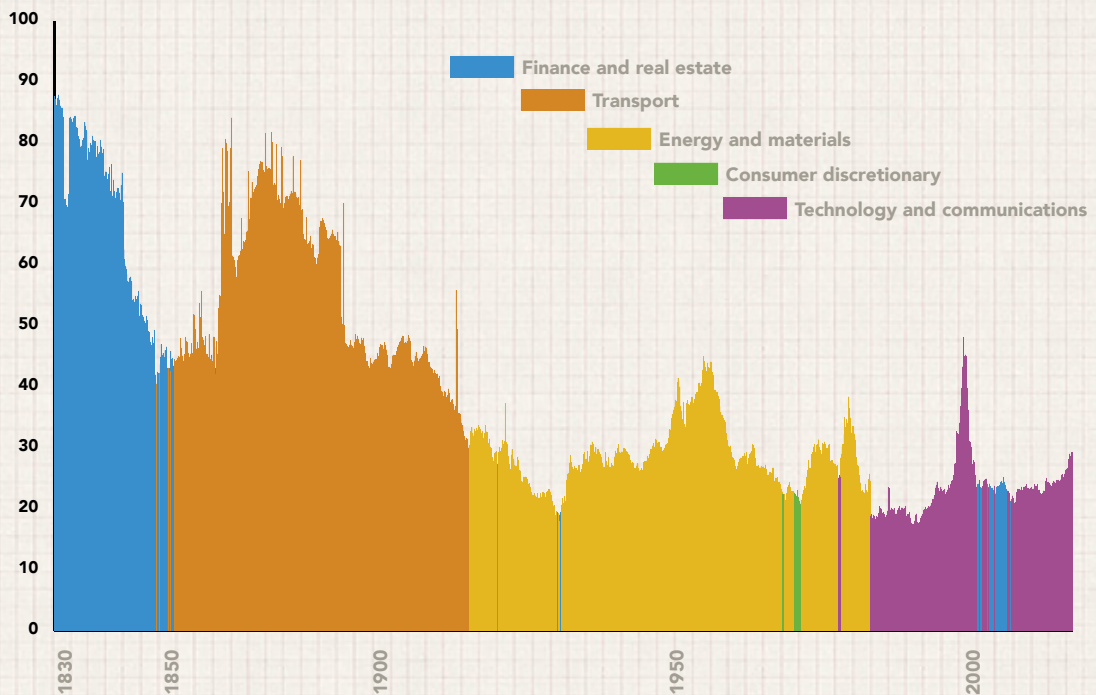
**CHARALEE HOELZL**

*Investment Associate*



# Market concentration – the long view

## PERCENTAGE SHARE OF THE LARGEST SECTOR IN THE US STOCK MARKET



### THE MAKE-UP OF THE US EQUITY MARKET HAS CHANGED DRAMATICALLY OVER THE PAST 200 YEARS, reflecting shifts in the economy.

When the stock market was first established, financial companies such as banks were the only listed corporations. In the 1800s the first transportation stocks emerged, most notably the railroad companies, which grew to dominate the market from the 1850s. Fast forward to today and technology plus communications accounts for just under 30% of the market.

This chart gives us the long view. The composition of markets has become more diversified over time. In the nineteenth century, the largest sector often accounted for more than half of the market. In the twenty-first century, after the early bursting of the dotcom bubble, the largest sector has typically accounted for less than one-fifth of the market.

Given concerns in recent years about the dominance of the technology sector in the US, one might have assumed that the market was more concentrated than it is.

# Stocks at the checkout

## CONSUMER CONFIDENCE AND STOCK MARKET PERFORMANCE





“ Impulse purchases at the checkout could have a deeper influence on consumer confidence and the real economy.”

**LATE IN 2018, US CONSUMER CONFIDENCE HIT ITS HIGHEST LEVEL**

in almost two decades, just after the US equity market reached a new record high.

*Prima facie*, there's a natural chain here: more optimistic consumers spend more, which is good for the economy and corporate profits; this in turn supports a stronger stock market. Rather intuitive, but does the data support this thesis?

Empirical evidence<sup>1</sup> shows that high stock returns boost consumer confidence: they make people feel wealthier, and lead them to believe their income will increase in the future.

But it's unclear whether the opposite also holds: could the stock market lead consumer confidence down? Today, Americans can

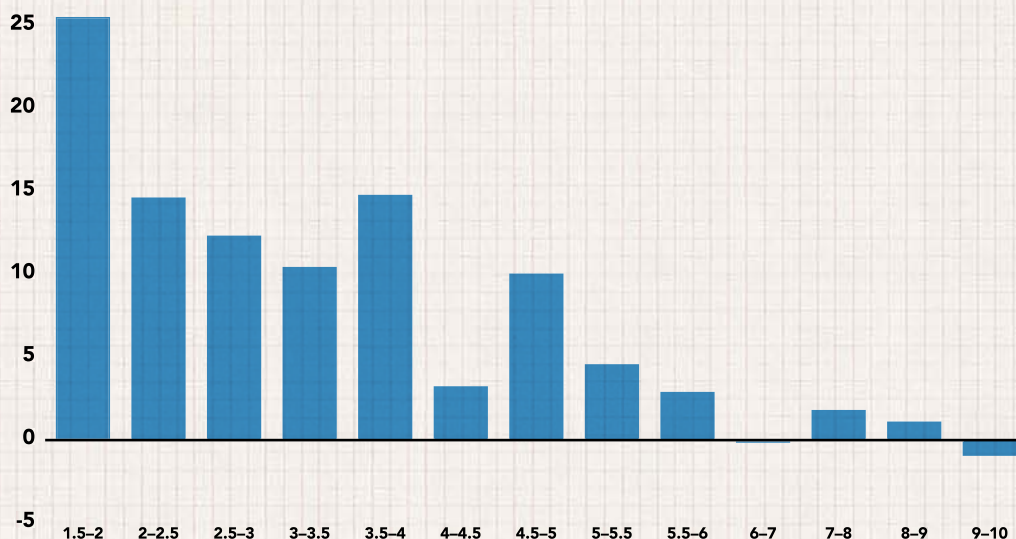
buy stocks at their local Walmart: as the consumer-investor relationship is more intertwined, impulse purchases at the checkout could have a deeper influence on consumer confidence and the real economy.

For investors, ebullient consumers may not be good news. More often than not, high consumer confidence has been followed by below-average returns from the stock market (confident investors are willing to pay more for stocks). By contrast, low consumer confidence readings have tended to be followed by above-average gains from the stock market.

# A big risk in bonds

## BOND MUTUAL FUNDS AND ETFS

Percentage of net flows arranged by yield on US 10-year at time of inflow. 1987 through October 2018.



### STARTING POINTS MAKE ALL THE DIFFERENCE.

The chart plots purchases of US bond funds over the past 30 years. It shows that over 50% of the money has been invested at times when the yield on 10-year Treasuries has been below 3%.

Why does this matter? If the three-decade-long bull market in bonds has come to an end, then the yield on the benchmark US government bond will continue trending upwards. Many investors in bond funds will therefore suffer capital losses – from what is often thought to be a risk-free asset.

Higher bond yields can also choke growth, put heavily-indebted companies

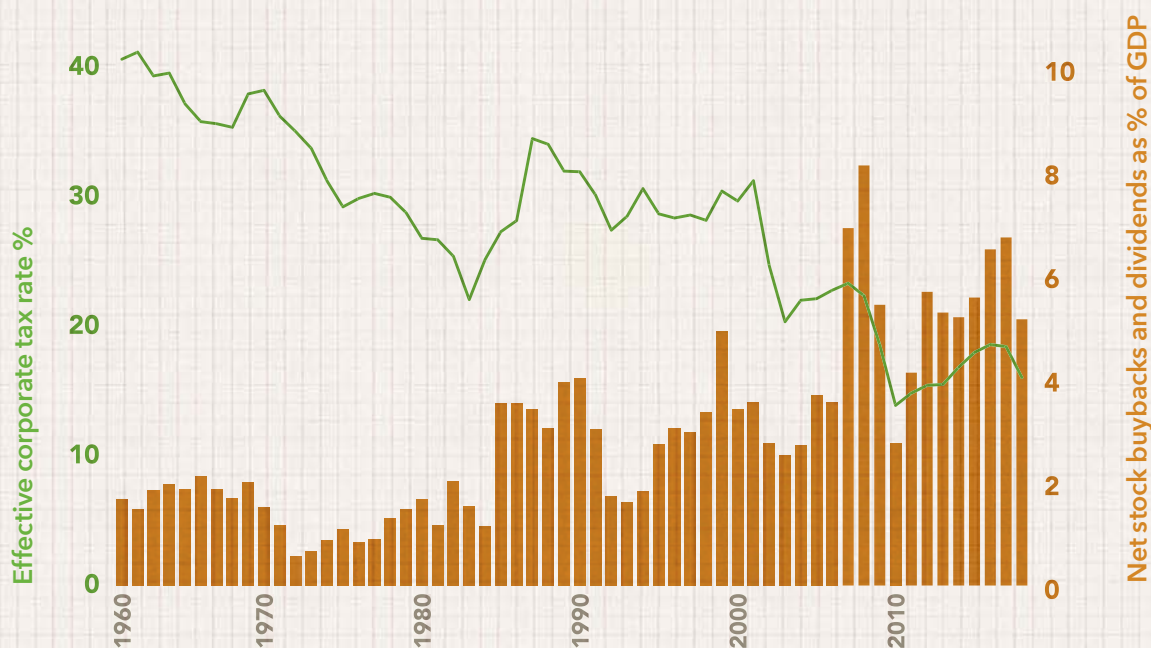
under pressure, and make it hard to justify very high multiples on equities. What happens if the herd starts to run away from bond funds?

In times of financial distress, a vicious cycle of redemptions and forced sales can set in. The banks that make a market in bonds may no longer be willing or able to act as shock absorbers, as they have in the past. Without this liquidity, investors face what's known as gap risk – a rapid and dramatic fall in the market price of the assets they own.



# A boon for capital, but not for labour

## CORPORATE TAXES, DIVIDENDS AND STOCK BUYBACKS



Source: US Bureau of Economic Analysis, US Federal Reserve, Ruffer calculations

1. US Bureau of Economic Analysis and US Federal Reserve

**OVER THE LAST HALF CENTURY**, US companies have enjoyed a steady fall in the effective rate of tax they pay on their profits.

While lower taxes mean higher profits, they do not necessarily translate into higher productive investment in the economy.

In fact, corporate investment as a percentage of GDP has declined from around 4% in the 1960s to just 2% in 2017.<sup>1</sup> The reverse can be seen in dividend payouts (now nearly 4%), while share buybacks have become an increasingly popular way for companies to return cash to shareholders. Taken together, dividends and share

buybacks by US non-financial firms have increased from less than 2% of GDP in the 1960s to over 5% in 2017 as shown in the chart above.

While this may signal a victory for shareholders, there are other issues at play. Lower investment threatens to undermine the long-term growth potential of the economy. At the same time, higher cash returns to shareholders further concentrates wealth in the hands of capital owners, while labour's share of income remains near record lows.

# Behind the illusion of stability

**HENRY MAXEY  
IN CONVERSATION  
WITH A COLLEAGUE**

**FIRST PUBLISHED  
IN JANUARY 2019.**

## 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 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.

## 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



**HENRY MAXEY**

*Chief Investment Officer*

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.

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

A mountainside 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 predicting the timing of the avalanche 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 values have fallen sharply.

### 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,

“While the monetary tightening continues, we're just inching closer to the point where Mr Wolf declares: ‘It's dinner time!’”

the very wide, and quite severe, falls in the markets at the tail end of last year 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.

### 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.

**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–”*

**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.

### 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 time. Then stops, momentarily. Before plummeting to the ground.

### 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.

### The last war being 2008?

Yes.

### 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.

“Humans are riddled with psychological biases. And fight or flight instincts.”

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.

**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.



“Rising interest rates could inflict much more damage on risky assets than they have in previous market cycles.”

**Let’s come back 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.

**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). 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.

### Why?

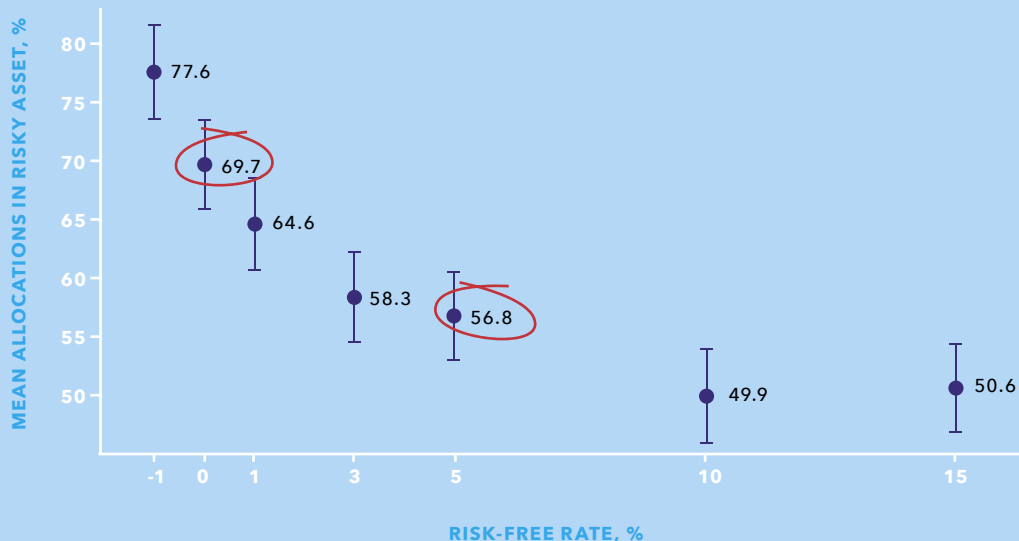
Because there should be much more selling of risky assets in this cycle, as US interest rates rise from 0% to, say, 3%. Compared with in previous cycles, when rates were rising from, say, 4% to 6%.

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.

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.

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.

### 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.

### 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 of as vanishingly unlikely.

The insurance is mispriced – mispriced in two ways. It is too cheap because the natural buyers are trying to save the money

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

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.

**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 its 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 evolves. 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.

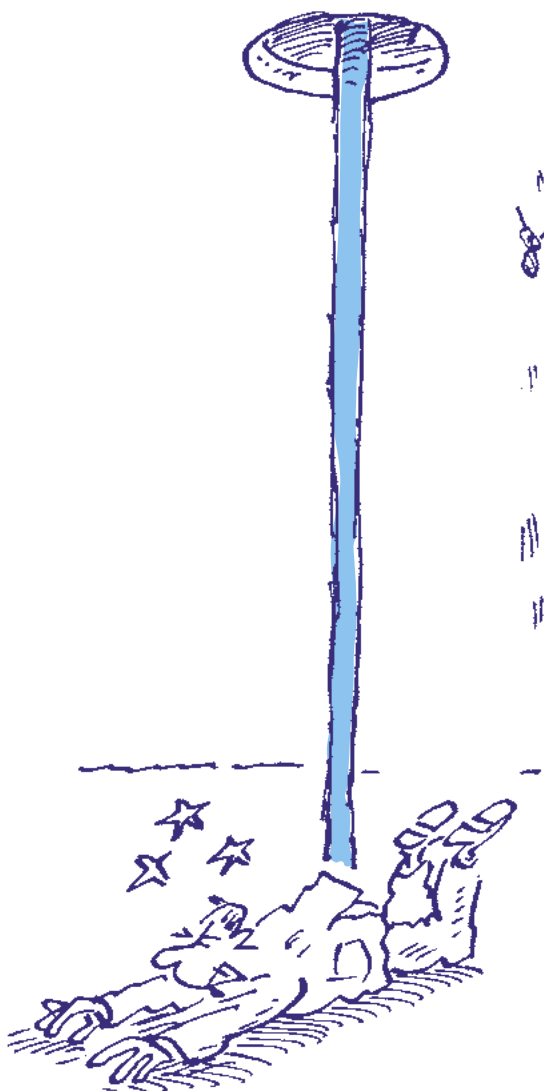
### Where are those dark holes?

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 2018 was illustrative. The perception of illiquidity meant that the fund had to be closed and liquidated in order to treat underlying





“Generic exposure – through cheap passive funds and ETFs – has become more popular in a low-yield world.”

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.

**Can we drill into that - what does this look like in the corporate bond market, corporate credit? You said earlier that credit markets will 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.

**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 financials.<sup>1</sup>

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.

1 PIMCO (2018), ‘Investment Grade Credit: Be Actively Aware of BBB Bonds’



One downgrade from BBB to junk and the price 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.

**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 caused credit to sell off and credit spreads to widen sharply. Recession fears were amplified.

Now picture a more optimistic investor. 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.

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 volume of debt known to be maturing in the US investment grade bond market over the next few years. Estimated to be more than \$600 billion in 2019, and on to just over \$700 billion in both 2020 and 2021.<sup>2</sup>

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.

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

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

### Let's take the macro first.

Central banks are now withdrawing liquidity from the markets. In the US, the Federal Reserve remains engaged in quantitative tightening and finessing the shape of its balance sheet. In the eurozone, it's progressive tapering of quantitative easing. In

“The effect of quantitative tightening and rising rates on liquidity is unlikely to be neat and tidy.”

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

**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.

## 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

**“It's not controversial to say that volatility of asset prices is a poor measure of risk.”**

underlying driver of the price. The bang is greater than the buck.

It's the multitude of factors coming together that makes 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, and 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.

**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 their 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.

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

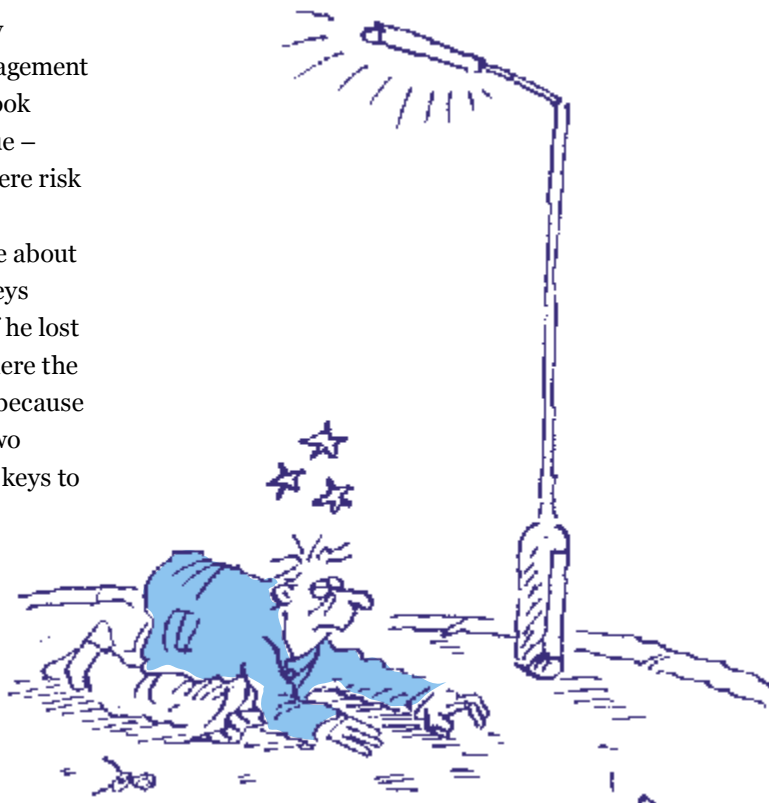
This cycle has seen the proliferation of investment

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.



## “Expect an avalanche. And clamber on to different ground.”

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.

### 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 spins outwards and compromises other parts of the system. That's not a surprise: close off the M1 and it's not long before the A1 is gridlocked.

### 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?

### 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. Think sudden drops from one level to another, with no stop in between.

### 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.

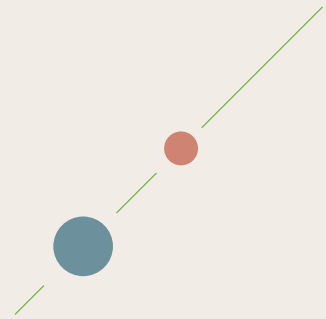
### To wrap up - what's a prudent investor to do?

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

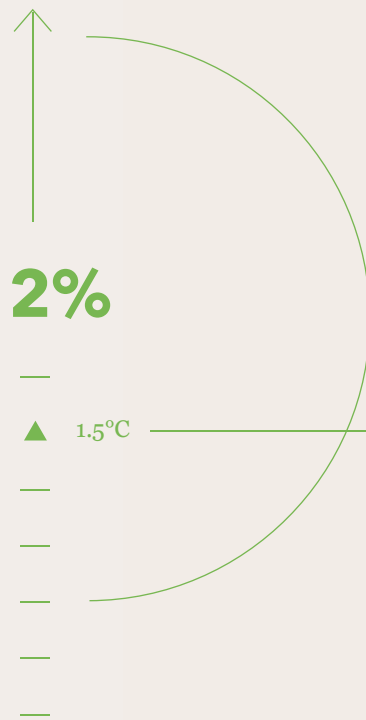
Our portfolios are built with the aim of keeping our clients safe, to perform well in a sharp market dislocation, and to allow us to profit from the opportunities a dislocation will bring. ●







# Natural capi Why investo







**ALEXIA PALACIOS**

*Associate – Responsible Investment*

# tal rs should care

“Anyone who believes in indefinite growth in anything physical, on a physically finite planet, is either mad – or an economist.”

Kenneth E Boulding

– adviser to President John F Kennedy

## **SYDNEY'S HOTTEST DAY SINCE 1939**

– temperatures hit 47°C. Freezing weather grips cities across North America – Omaha, Nebraska sees new record low of -28°C. Typhoon Mangkhut devastates the Philippines and Southern China. US East Coast battered by Hurricane Florence.

Once again, extreme weather made headlines in 2018. In the UK, while we didn't reach the highs of Sydney or the lows of Omaha, there were extremes by historical

standards. Take St James's Park, a short walk from Ruffer's office in London. On 19 March 2018, there was snow on the ground. On 19 April, the temperature hit 29.1°C, the highest in the UK in April for nearly 70 years.

Weather patterns are changing. The world's rainforests are being destroyed. Our atmosphere and oceans are increasingly polluted. One way of understanding these interconnected events is that they are a consequence of the depletion of the world's natural capital. This is fast becoming an important concept for investors.

## A TRAGEDY OF THE COMMONS - AND OF THE HORIZON

Natural capital is an evolving concept and one that can be defined in many ways. In essence, it is the world's stock of natural assets – including air, water, soil and all living things – that combine to yield a flow of benefits to people.

Human life is possible because of natural assets and the benefits we derive from them. These include the food we eat, the water we drink and the air we breathe. As well as other vital processes for human survival – such as climate regulation, flood defences and carbon storage.

Consider the rainforest. It is not just a resource of wood but also a carbon sink. It plays a central role in regulating our climate.

These natural assets are difficult to protect and even harder to value. As often

“These natural assets are difficult to protect and even harder to value.”

happens with shared assets, they have been exploited and used wastefully for years, with the consequence that the world's natural capital is being depleted.

Using a concept from economics, this is a tragedy of the commons. A tragedy where individuals act independently and according to their own self-interest. Yet their individual behaviour is contrary to the common good because it depletes or damages a shared resource. Originally, this concept used the example of unregulated grazing of livestock on common land. In the modern context, it can be applied to any shared resource, such as rivers, oceans and the atmosphere.

Today, we face not only a tragedy of the commons but what Mark Carney, Governor of The Bank of England, has called a “tragedy of the horizon”. As a lot of the damage to these shared assets is cumulative and persistent, current generations are imposing costs on futures ones.



## THE PLANET'S BALANCE SHEET

The world's natural capital is made up of lots of diverse assets. There are many ways they can be damaged and the number of companies, industries and sectors causing the damage is vast.

As investors, we are stewards of our clients' assets and so we must consider all potential risks.

Imagine that the costs of damaging the world's natural capital currently sit on a theoretical planetary balance sheet. What if some or all of these costs were reallocated to the financial balance sheets of individual companies?

Water pollution is a good example. A mining company damages natural capital by releasing chemicals into waterways. If the company was made to pay for this damage, its costs would increase substantially and profitability would fall. Similarly, some businesses within industries such

as agriculture or tourism have negatively impacted biodiversity – how might these businesses be made to pay for this damage?

Calculating the value of the world's natural capital – and the costs of the damage to it – is not straightforward. But progress is being made, and the estimated costs are high.

For example, The Lancet Commission on pollution and health estimated the annual cost of pollution to the global economy to be \$4.6 trillion. This is equivalent to around 6% of global economic output.

## WILL POLLUTERS PAY?

The area that should be of considerable concern to investors is greenhouse gas emissions.

The atmosphere is a shared resource that's being damaged by individuals and companies around the world. The problem is hard to solve, because greenhouse gas levels build up over time; the gases remain in the

“ For investors, natural capital is no longer purely an environmental concern. It is also a financial one that should not be ignored.”

atmosphere for decades; and the effects can be felt thousands of miles from where the gases were emitted.

For greenhouse gas emissions to move from an environmental issue (which some companies still ignore) to a financial issue, a meaningful price for carbon is needed.

The report of the High-Level Commission on Carbon Prices analysed what would be needed to achieve the goals of the Paris Agreement on limiting global warming. The Commission concluded the price of a tonne of carbon needs to rise to at least \$40 to \$80 by 2020, and to between \$50 and \$100 by 2030. That compares with prices of below \$20 per tonne in Europe for most of 2018. A number of options are available to achieve a meaningful price on carbon, including a carbon tax or an emissions trading scheme.

A company's greenhouse gas emissions can be measured (and this is easier than, say, measuring damage to biodiversity). The available data is impressive. Coverage is broad, allowing for comparisons between companies, and over time.

With new perspectives and data comes the opportunity to hold companies accountable for the damage they are causing to natural assets. Paying compensation for emissions could substantially raise operating

costs, reducing the profitability and financial returns of whole industries. Companies that don't comply with new regulation might also lose their right to operate.

There is now a strong case for all investors to consider natural capital issues as, ultimately, every company depends on natural assets.

## A COLLABORATIVE APPROACH

At Ruffer, we want to understand how the companies we invest in are managing natural capital issues, particularly the risk of a meaningful price on carbon.

We seek to understand how a company governs these risks at the management and board levels. To evaluate a company's strategy accurately, we need data on greenhouse gas emissions. And we need detailed disclosures, including information about whether the company uses an internal price of carbon (and, if so, how this is used in its scenario analysis).

To encourage companies to disclose this information, and to improve corporate governance, we collaborate with other investors who share our concerns. A number of initiatives have been launched recently, the largest of which is Climate Action 100+.



Ruffer was a founding investor signatory in December 2017.

More broadly, to preserve and protect the world's natural capital, investors need to develop valuation techniques and methods that allow companies to quantify their impact on natural capital, and the extent to which they depend on natural assets. There have been some encouraging early steps here. But there are still many issues in the structure and consistency of the metrics that are being used. Only when these metrics can be linked to traditional valuation measures will it be possible for investors to evaluate fully a company's impact and dependence on natural capital.

## CONCLUSION

For investors, natural capital is no longer purely an environmental concern. It is also a financial one that should not be ignored.

Social pressure is changing the debate – and the regulatory response – as environmental issues become harder for governments to ignore.

The changes will affect entire sectors, bringing investors both opportunities and risks, as new companies emerge, new regulations are applied, and as new technologies and industries develop.

A deep understanding of natural capital issues will leave investors well placed to make good investment decisions. ●





ON  
Starlings  
&  
CASINOS

PROSPECT THEORY,  
COMPLEX SYSTEMS  
RESEARCH AND  
THE WORK OF TWO  
PHYSICISTS CAN HELP  
INVESTORS MAKE  
BETTER DECISIONS.

**ANDREW VAN BILJON***Research Director*

**HOW DO PEOPLE MAKE** decisions when faced with uncertainty? Academics have advanced various ways to explain how we make decisions in the face of an unknowable future, both as individuals and collectively, as is the case in a market. They can shed light on how humans approach risk.

One theory has us weighing up the likelihood of different outcomes, and calculating the possible effects on our happiness. This is the expected utility paradigm of economics. While this may sound sensible, probabilities can be difficult to estimate, particularly across a number of outcomes. And the concept of happiness or utility may not be consistent enough to be of much use.

In the late 1970s, two psychologists, Daniel Kahneman and Amos Tversky, set out to explore how we actually make decisions under uncertainty.<sup>1</sup> In their experiments, people revealed foibles, contradictions and irrationality when choosing between a series of carefully-framed bets. From this work, Kahneman and Tversky developed prospect theory, a central pillar in the now-established field of behavioural finance.

In a nutshell, prospect theory states that people make decisions based on potential gains and losses, rather than any resulting level of wealth. These gains and losses are evaluated using rules-of-thumb and mental shortcuts. This leads to something novel: people tend to be risk averse when faced with gains, and risk-seeking when faced with losses.

What follows is a crash course in prospect theory, straying into the role of time in decision making, and on to accounting for complexity in financial systems.

<sup>1</sup> Initially (1979), Kahneman and Tversky

## A TAXONOMY OF ATTITUDES

Once the reasoning is spelled out, prospect theory feels intuitive. Losses hurt more than gains feel good. People tend to overweight unlikely events, and underweight likely ones. This gives us an extended taxonomy of attitudes towards risk.

Avoiding risk when faced with likely gains – through fear of disappointment. Avoiding risk when faced with unlikely losses – through fear of losing large. Seeking risk when faced with likely losses – because we're desperate to avoid loss. And seeking risk when faced with unlikely gains – say, buying a lottery ticket.

For investors, becoming risk-seeking in the face of losses, and risk averse in the face of gains, may sound familiar. Selling winners too early. Holding losers too long. Then there's the downtrodden portfolio manager. Taking one last big bet in an attempt to save his fund, only for the bet to prove to be just that – his last.

After the financial crisis in 2008, this type of analysis caught the collective imagination. Economic orthodoxy was judged to have failed – to have failed to predict or explain events, a failure linked to neglect of human psychology. Down with the staid approach of mathematics and rational utility maximisers! Up and onwards... into the brave new world of human behaviour.

## ADDRESSING FINANCIAL PUZZLES

Any theory of individual choice faces a challenge – can it be applied more generally, in aggregate, while still describing the world well? In economics, expected utility can be aggregated into the Capital Asset Pricing Model (CAPM), a model that aims to account for the relationship between the risk

“Prospect theory suggests that as individuals we seek out stocks that have a small chance of a large return, in an attempt to find the next big winner.”

and return of financial assets. The model has a number of weaknesses, including its handling of extreme (tail) events and the inconsistency of results through time. Does accommodating behavioural considerations make for a better pricing model?

Prospect theory suggests that as individuals we seek out stocks that have a small chance of a large return, in an attempt to find the next big winner. In a number of studies, the evidence has supported the theory.<sup>2</sup> Investors do seem to care about the tendency of an asset either to have a tail of more positive returns or of more negative returns (skewness). Therefore, including these preferences in a CAPM-style model can improve the model's performance under certain assumptions.

The equity premium puzzle<sup>3</sup> is another part of the finance landscape that has been subjected to the behavioural lens. The puzzle is that investors generally demand a higher return for investing in risky equities

<sup>2</sup> Boyer, Mitton, and Vorkink (2010); Bali, Cakici, and Whitelaw (2011); Conrad, Dittmar, and Ghysels (2013)

<sup>3</sup> Mehra and Prescott (1985)



over safer bonds; this excess is higher than conventional economic theory would suggest. Prospect theory helps – because investors' loss aversion combines with myopia.<sup>4</sup>

Take Bob, an imaginary investor. Bob checks the performance of his portfolio several times a week. This regular checking means he sees more volatility, up and down. Like most people, Bob feels losses more keenly than gains of the same size. Over time, a sort of emotional deficit builds up: for an equal number of gains and losses, the losses hurt more. For this reason, Bob demands a larger-than-predicted equity premium.

While a behavioural angle provides some appealing solutions to market conundrums, there are shortcomings.<sup>5</sup> There is also the danger we create our own Just So stories of how the world works – extrapolating observed or postulated behaviours and assuming investors behave in a certain way all the time. Are we using our stories to explain away consequential features of finance and markets?

Consider the battered world of the short-volatility exchange-traded fund. In effect, these products were a bet the market would keep going up smoothly. They stood to do well for as long as this was the case. They also stood to suffer badly if markets fell. In the jargon, their return profile had a highly negative skew – a tendency to produce gains, punctuated by infrequent but sizeable losses. In an era of steady equity returns and rock-bottom interest rates, this return profile proved irresistible. Retail investors piled into the products, chasing the momentum of positive gains. This all ended in tears in February 2018: volatility spiked, the negative skew showed the sting in its tail, and short-volatility products lost most or all of their value.

This buying behaviour arguably went

against one of the key findings of prospect theory. Investors were buying an asset experiencing healthy gains, participating in a momentum trade. Instead of selling winners – as per the original findings – investors were chasing winners.

What is clear is that investor behaviour is far from consistent over time and under different conditions. There is always potential for a tweak to be made to a model's preference curve or reference point, but the hallmark of an enduring model is that its foundations don't need to be altered to cope with differing environments. The path of time shouldn't change our fundamental description of the markets.

## A BRIEF EXPOSITION ON TIME

Fittingly, it is to time that we turn in search of a more consistent perspective on investor decision-making.

In Study A, 100 gamblers spend a day at a casino. Each starts with £100. At the end of the day, the gamblers will have either made money or lost money. Some might lose their entire £100 and go bust.

Say only one gambler lost everything. We might reasonably infer there is a 1% chance



4 Benartzi and Thaler (1995)

5 Attempts to reproduce experimental results have not always been successful (Gal and Rucker (2018), Yelchiam (2018)). And while the approach provides a descriptive framework for observed human behaviour, it doesn't extend to any sort of psychological explanation, making it incomplete as a model of human motivation (Staddon, Taylor, and Francis (2017)).

of going bust, particularly if we re-run Study A on several occasions.

Now let's tweak our study. In Study B, we give one gambler £100 and force the poor soul to gamble for 100 days in a row. What are the chances of going bust? Because this is one gambler betting repeatedly for 100 days – rather than 100 gamblers betting for only one day – the odds are certainly higher than 1% and possibly even a certainty. Furthermore, once the money is all gone the gambler cannot play anymore. Whether on day five or 55, our experiment is over.

This example draws out a key distinction. In Study A, we are considering risk across outcomes at a point in time – a parallel universe view. In Study B, we are considering risk through time. Study B captures the notion of risk of ruin: any decision is vastly different if someone faces the prospect of losing everything along the way. Risk of ruin scenarios are difficult to analyse, because a hard ending is lurking. The sequencing of events is vital when assessing risk. Any sequence that results in disaster at zero renders the rest of the sequence irrelevant. You can't make money if you're out of the game.

Unfortunately, modern finance is not very good at accounting for any of these phenomena. The current state of decision theory suggests that if a gamble is expected to be favourable on average, then playing it repeatedly will be advantageous. In Study A, even if there were more winners than losers at the end of the day, repeatedly gambling at that casino is likely to be dangerous, given that one player went bust.

## INSIGHTS FROM PHYSICISTS

How then do we reconcile the parallel-universe approach and the sequencing-

through-time approach? Two physicists, Ole Peters and Murray Gell-Mann, argue much of decision theory has been misinterpreted by failing to distinguish between the two approaches.<sup>6</sup> If we understand decisions as being taken with reference to outcomes through time – rather than across hypothetical parallel universes – the results fit much better with real-world observation. And they can help address discrepancies in existing theory.

In simple finance terms, Peters and Gell-Mann argue that people seek to maximise the growth rate of their wealth through time. The outcome of such an approach has the expected positive implications for overall wealth, but it has also been shown to be the best way to allocate across uncertain investments.<sup>7</sup> No ethereal notion of utility is needed. And, notably, the results start to look like those proposed by prospect theory.

It's worth unpacking why this is the case. Recall that prospect theory describes people as loss averse – more affected by losses than gains of an equal size. In seeking to maximise the growth in her wealth, an investor is impacted asymmetrically by down periods: a 10% fall must be followed by an 11% gain in order to get the investor back to where she started. What's more, the threat of bankruptcy, or at least a substantial dent in starting capital, always lurks in the shadows.

Negative shocks therefore affect the overall growth of wealth more than an equivalent positive – either because they must be followed by even better outturns to get back to zero, or because they drag us closer to the bankruptcy line, at which point we're out of the game. With this in mind, it becomes natural, even necessary, to protect small gains and to avoid losses, especially large ones. But the reasoning doesn't require

6 Peters and Gell-Mann (2016)

7 Kelly (1956)

8 Towers Watson (2013), Thinking Ahead Institute (2016)

“The flock appears to move through the air as one organism, forming myriad shapes and flowing in different directions, almost like a liquid.”

any allusion to behaviour, preferences or emotion. The mere focus on growth in wealth is enough to prescribe this approach. We are now shown a way to address market conundrums without resorting to a behavioural crutch. Maybe we are all more rational than we thought.

Is this focus on growth rates through time the answer to all of our decision-making woes? Alas not, because the information needed to make accurate assessments is normally very difficult to come by. There are already problems with how risk is characterised in finance, with CAPM-style thinking still dominant. Even the entire history of modern markets as we know them only stretches for a couple of hundred years at best: this is unlikely to be enough to have witnessed the full range of possible outcomes.

### ACCOUNTING FOR COMPLEXITY

For investors, one of the deeper insights from prospect theory links to people's inability to evaluate small probabilities accurately. If we are trying to maximise the growth of our wealth through time, but are not good at accounting for unlikely events, we may come a cropper. What can be done?

There is one area of research that has shown great promise – if not in solving the problem of market uncertainty, then at least in understanding it. Complex systems research has been developing since the 1950s. It looks at systems that share a number of characteristics: simple components that interact; adaptive dynamics that respond to conditions; information being shared between the components; and no central control.<sup>8</sup>

This may not sound particularly special, but systems with these characteristics can



give rise to wonderfully rich dynamics, often unexpectedly. Good examples include seismic activity, weather systems, traffic conditions and the different states of water. Or consider murmurations of starlings. The birds flock together when arriving at or leaving their roost site. They do this to confound predators, to socialise, to share information and to group together for warmth. The flock appears to move through the air as one organism, forming myriad shapes and flowing in different directions, almost like a liquid. At the individual level, each bird is following simple rules to keep close to, but not crash into, its neighbours. On a large scale, the results are surprising, richly complex and beautiful.

Back to investing. Studying complex systems is insightful, especially when compared with how the markets tend to be conceptualised. The dominant view tends to consider risk versus reward in rather static terms. Prevailing relationships are used as a guide to the future. Assessments of trade-offs don't take full account of the potential actions of others.

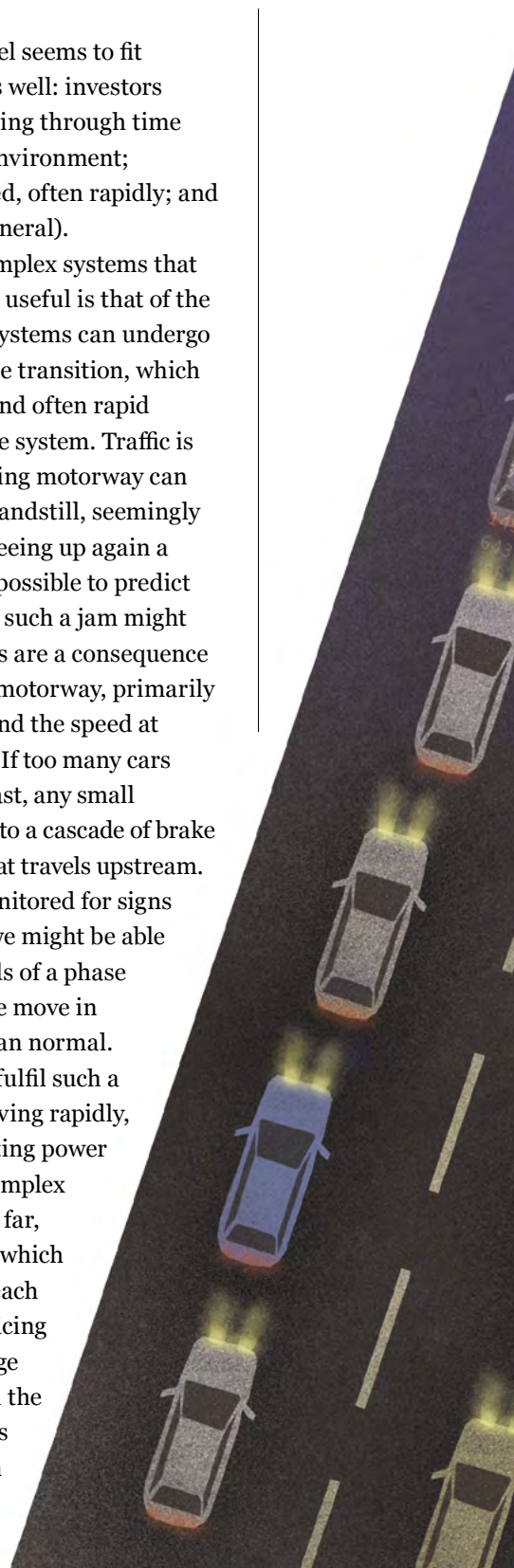
A current example is the proliferation of investment strategies that aim to react dynamically to any market weakness. These include most strategies labelled "crisis risk offset" or "risk mitigation", many funds with "systematic" or "dynamic" in their titles, and any approach that scales its degree of risk using the past volatility of prices. These strategies often look wonderful when tested over historical data, but can fail spectacularly when applied in real time. A signal the strategy uses may fail if history doesn't quite repeat, or even rhyme. Or the strategy may become too widely used, resulting in a self-fulfilling failure: if too many people rush to the fire exit at once, the fire exit ceases to function.

## CRITICAL STATES

The complex system label seems to fit the structure of markets well: investors interacting; prices evolving through time and responding to the environment; information being shared, often rapidly; and no central control (in general).

One concept from complex systems that seems to be particularly useful is that of the critical state. Complex systems can undergo something called a phase transition, which describes a significant and often rapid change in the state of the system. Traffic is an example. A free-flowing motorway can suddenly back up to a standstill, seemingly without cause, before freeing up again a short while later. It's impossible to predict exactly where and when such a jam might occur. But we know jams are a consequence of the conditions of the motorway, primarily the density of vehicles and the speed at which they're travelling. If too many cars are trying to travel too fast, any small perturbation can turn into a cascade of brake lights, and a blockage that travels upstream.

If markets can be monitored for signs of a critical state, then we might be able to identify when the odds of a phase transition – here, a large move in markets – are higher than normal. What sort of indicators fulfil such a role? The science is evolving rapidly, and advances in computing power have made modelling complex systems more viable. So far, studying the manner in which prices move relative to each other, changes in the pricing of insurance against large market moves, and even the nature of the oscillations of a single price through



time have all been informative in specific scenarios.<sup>9</sup>

## TOWARDS A PATH THROUGH RISK

For investors making decisions, the verdict seems mixed. We aren't all that bad at optimising basic investing choices through time. But we struggle with probabilities, especially in the extreme, and markets don't always behave how we think – or are led to think – they do. Prospect theory says we overestimate the odds of more unlikely events, while some studies<sup>10</sup> suggest we underestimate the odds if the parameters are poorly defined, as they often are in investing.

Turning from human limitations to the market as a whole, a complex systems perspective can help us. Markets are not wise discounters of economic prospects, divining truth through time and susceptible only to occasional hiccups. They are living complex systems, with uncountable feedback loops. They undergo severe and rapid changes in character, presenting patterns we haven't seen before. In such an environment, we should be wary of our estimates of the likelihood of risks; these risks are likely to be poorly or insufficiently defined.

The better the complexity of the financial system is understood, the closer we can get to appreciating the true nature of what's involved when investing. ●

<sup>9</sup> Sornette and Cauwels (2015)

<sup>10</sup> Hertwig et al (2004)

For a full list of references cited in the footnotes, please visit [ruffer.co.uk/references2019](http://ruffer.co.uk/references2019)







GUEST ARTICLE

**EDWARD CHANCELLOR***Financial historian,  
and friend of Ruffer*

# John Law

## A MODERN MONETARY TALE – FROM THE EARLY 1700s

**WHEN LEHMAN BROTHERS WENT DOWN 10 YEARS AGO**, it was feared that another Great Depression was in the offing. In order to avoid such an outcome, central banks employed extreme measures, slashing interest rates and buying up trillions of dollars' worth of securities. A rerun of the early 1930s was avoided.

These bold monetary experiments call to mind a different time and place: Regency France, some 300 years ago when a Scottish adventurer, John Law, established a central bank, whose paper money was used to buy up France's national debt, dramatically lowered interest rates and inflated one of history's great speculative bubbles. John Law can be seen as the father of quantitative easing and of ultralow interest rates. As central bankers attempt to reverse some of their post-crisis measures, the resounding failure of Law's great scheme is instructive.

In early 1720, Law was France's controller-general of finances (in effect,

prime minister). He was founder and head of France's first central bank and chief executive of the Company of the Indies (popularly known as the Mississippi Company), a business which incorporated all of France's overseas trading companies and owned the trading and land rights to the French territory of Louisiana, as well as sundry other businesses. At its peak, the Mississippi Company was valued at around twice France's national income. By comparison, writes Law's most recent biographer James Buchan, "Apple Inc is a rag-and-bone shop".<sup>1</sup>

By his own reckoning, Law was the richest man in history. He acquired extensive properties in Paris (including most of the houses in the Place Vendôme) and various estates across France. Law was fawned upon by princes and statesmen alike. This was no mean achievement for a man who started life as a member of the middling ranks, the son of an Edinburgh goldsmith, and who as a feckless

1 James Buchan (2017), letter to the Financial Times  
Image Sources: Top: Artepics / Alamy Stock Photo. Bottom: Juice Images / Alamy Stock Photo

“ Law was not primarily a man of business. He was first and foremost a radical monetary thinker. His great ambition was to establish a bank.”

youth some quarter of a century earlier had killed another man in a duel in Bloomsbury Square, was sentenced to be hanged, but escaped from jail and fled to the Continent.

### A LOVE OF IDEAS

Law was not primarily a man of business. He was first and foremost a radical monetary thinker. “A man more in love with his ideas than with money”,<sup>2</sup> as Montesquieu put it. Law believed that economic progress was hindered by a lack of money and by excessively high interest rates. His great

ambition was to establish a bank, demonetise gold and deliver easy money. John Maynard Keynes had much the same ambition some two centuries later. (Curiously, in his own writings, the Cambridge economist makes only a single fleeting reference to his eighteenth-century forerunner).

Having arrived in France in 1714 at the end of the long reign of Louis XIV, Law found his opportunity to put his plans into practice. France was suffering from a financial and economic crisis: unemployment was high, prices were falling



and the king's credit was shot. The country's economic and fiscal situation somewhat resembled Europe's sovereign debt crisis of a few years ago. As the new king Louis XV was a minor, the country came under the Regency of Philippe II, Duke of Orléans, an easy-going figure who was open to any suggestions that might help France escape her dire predicament.

In late 1715, Law outlined his proposal to the Regent: "An abundance of money which would lower the interest rate to two per cent," wrote Law, "would, in reducing the financing costs of the debts and public offices, etc, relieve the King. It would lighten the burden of the indebted noble landowners. This latter group would be enriched because agricultural goods would be sold at higher prices. It would enrich traders who would then be able to borrow at a lower interest rate and give employment to the people."<sup>3</sup> Here Law sounds much like a contemporary central banker except without the academic verbiage.

Law's scheme, or "System" as he called it, started in 1716 with the establishment of a private bank, known as the General Bank. The following year, he acquired the Company of the Indies (Mississippi Company) and soon after acquired a host of other businesses. In 1719, Law committed the Company to take over France's entire national debt – then estimated to be roughly equivalent to the nation's annual output. In order to deliver on this promise, the king's creditors had to be enticed to exchange their debt securities for Mississippi shares. And that required a high and rising share price. The enterprising Scotsman found numerous ways to achieve this end.

Subscribers in early share issues were allowed to pay in depreciated government

notes. When the shares were going nowhere in the market, Law personally offered to buy out shareholders several months in the future at a premium to the prevailing market price. After the shares started to take off, Law required applicants for new issues to hold shares from previous issues, which were in short supply. The terms of the later subscriptions allowed for only small down payments in cash. Law also boosted the Company's dividend, although it is doubtful whether the dividend was actually covered by earnings.

### LOWERING RATES

By far the most important impetus to the ensuing bubble was monetary. In late 1718, Law's bank was nationalised and renamed the Royal Bank. Just like any modern central bank, the Royal Bank was not required to hold gold reserves against the notes it issued. This meant there was no longer any effective limit on the amount of notes that could enter circulation. Over the following year, the issue of bank notes climbed from around 40 million livres to over a billion and France's total money supply more than doubled.

An immediate consequence of this torrent of money was to bring down the rate of interest in France. This was exactly what Law intended. In the words of one biographer, he had always been a "low interest rate advocate". Throughout Europe this was a period of "easy money", wrote Sidney Homer and Richard Sylla in their *History of Interest Rates*. The cost of commercial loans in France fell from an average of 6% before Law's arrival to less than 2% by late 1719. After Law was appointed finance minister in January 1720, he proposed reducing the interest payments on the royal debts (which were callable) to 2%.

Law's Royal Bank supplied loans to speculators against the collateral of shares at an annual cost of 2%. Law and his brother William borrowed millions of livres to buy shares and properties. The Company borrowed money from the bank to purchase its own shares in the market. At one stage in late 1719, the Company offered to acquire shares at a premium to their market price. At the same time, it opened an office, named the *Bureau d'achat et de vente*, whose purpose was to trade in the Company's stock. By early 1720 the Company had bought back nearly a fifth of its outstanding shares with loans (on which it paid no interest) amounting to hundreds of millions of livres. In similar vein, US companies in recent years have availed themselves of low-cost loans to repurchase several trillion of dollars' worth of their own shares.

The Company's share repurchases were responsible for a considerable amount of the increase in the money supply. In fact, the great majority of the new bank notes issued at the time were in the denomination of 10,000 livres. These notes were used only for lending against shares as they were too large for normal commercial transactions. As the contemporary banker and early economist Richard Cantillon noted, Law's new money didn't immediately enter the general circulation but remained, as we would say, trapped in the financial sector where its main effect was to inflate asset prices. Again, we find a similarity with the US Federal Reserve's policy of quantitative easing which commenced in 2008 and continued for many years afterwards. The new money created by the Fed has mostly been spent on the purchase of financial securities rather than for conventional lending, and has served largely to inflate asset prices.

## PLEASANT INDEED

Easy money has many consequences, some of which in the short-run are rather pleasant. Pleasant indeed if you were a holder of Mississippi Company shares, which from a price of around 500 livres in early 1719 climbed to close to 10,000 by the end of the year. Even at its peak, the Company's share price was not totally irrational. At 10,000 livres the shares produced a dividend yield of close to 2% which was in line with the rate of interest on outstanding government debt. As the eighteenth-century Scottish economist Sir James Steuart astutely commented: "The value in capital, really existed relative to the rate of interest."<sup>4</sup> The price of French real estate also climbed at the time, with properties selling for rental yields as low as 1%. Without the prop of low interest rates, however, the Mississippi shares were overvalued somewhere between two to five times, according to a recent analysis by Francois Velde of the Chicago Federal Reserve.

The French rentiers had no choice but to participate in Law's bubble. As one nineteenth-century commentator put it: "By a stroke of the pen, the holders of the greater part of the government indebtedness found their investments destroyed at a period when the decline in interest and the rise in the value of real and personal property seemed to cut them off from all avenues for investment except those which led to the system itself."<sup>5</sup> Savers looking to maintain their investment income in the post-Lehman world of ultralow interest rates have found themselves in a similar fix. They have also been told that historically high valuations for US stocks and other assets classes were in fact quite reasonable considering the low prevailing level of interest rates.

The rise in the Mississippi stock brought

4 James Steuart (1966), *An Inquiry into the Principles of Political Economy*

5 Andrew McFarland Davis, *A Historic Study of Law's System*

Image Sources: Left: PRISMA ARCHIVO / Alamy Stock Photo. Right: Randy Colas / Unsplash



“ The bubble burst. Paris erupted in riots. Law’s carriage was smashed to pieces by the mob.”

a throng of speculators to the open-air stock market of the Rue Quincampoix. Foreigners flocked to Paris in their tens of thousands. The speculative contagion soon spread to Amsterdam and London, where the South Sea bubble, a scheme which copied Law's in several respects, took off. Many contemporaries were baffled by this mania for paper money and paper stocks. To the Duke de Saint-Simon, Law's scheme appeared to involve nothing other than robbing Peter to pay Paul. "Chimera" was the word used by Saint-Simon, Defoe, Voltaire and others to describe the trade in shares.

The most successful Mississippians quickly amassed great fortunes. The word *millionaire* made its first appearance in the French language. As did *realise*, meaning "the conversion of ideal property into something real" (Washington Irving's definition).<sup>6</sup> Realisations of Mississippi gains fuelled a surge of ostentatious spending, on gilded carriages, frock coats, Gobelin tapestries and other fripperies. The Duke of Bourbon spent his Mississippi windfall on building magnificent stables at home in Chantilly, designed to hold some 200 horses and 23 carriages. In recent years the Mississippi millionaires have found their counterpart in the growing ranks of billionaires and "ultra-high-net worth individuals", who have spent some of their new-found fortunes on luxury yachts, vintage motor cars, Hermès handbags, contemporary art works and the like.

## NO WORKERS WITHOUT WORK

Under Law's management France's economy prospered. As he later wrote: "The Prince was the head of a rich people, his revenues increased and the burdens on his people reduced. There were no longer uncultivated lands or workers without work. Peasants were fed and clothed and owed nothing to either King or master. Manufactures, navigation and trade increased and were valued... credit was preferred and gained relative to specie."<sup>7</sup>

Unfortunately the good times didn't last. The newly printed money started seeping into the economy, producing a different kind of inflation – that which comes from too much money chasing too few goods. The price of food went through the roof. The American economic historian Earl J. Hamilton later blamed the upsurge of inflation on the excessively low interest rates instituted by Law: "The disparity between the natural and market rates of interest [wrote Hamilton] accentuated a credit expansion and played an important role in the sharp upswing of prices"<sup>8</sup> which roughly doubled during the bubble period, far outpacing gains in wages.

Law faced another intractable problem. His monetary experiment took place at a time when the French currency was fixed relative to sterling, which in turn was convertible into gold. In order to make his notes more attractive, Law also raised by fiat the value of the French livre relative to gold. What this meant is that Law was increasing the note issue and its gold value while trying to keep the currency's foreign exchange rate constant. This was an impossible task. As speculators took profits and inflation became rampant, people started taking their money out of the country even though

6 Washington Irving, *The Great Mississippi Bubble*

7 Antoin Murphy (2017), *John Law: A Twenty-First Century Banker in the 18th Century?*

8 Earl Hamilton (1936), *Price and Wages at Paris under John Law's System*

9 James Buchan, *John Law: A Scottish Adventurer of the Eighteenth Century*

“ Modern central bankers appear not to have heeded the lessons of Law’s failure.

They are, to adapt Keynes’s famous phrase, the “slaves of a defunct economist”.”

this was forbidden. The French currency collapsed on the foreign exchanges, losing more than half of its value relative to sterling.

The slide on the foreign exchanges forced Law to consider his options. He could either carry on printing money to buy shares, but this would likely produce further inflation. Or, he could remove the excess notes from circulation. Law took the bitter pill. In May 1720, he ordered the devaluation of both the shares and notes, and the cancellation of millions of bank notes. The bubble burst. Paris erupted in riots. Law’s carriage was smashed to pieces by the mob. A week later, the great man was sacked from his post as finance minister. By the end of the year, the Mississippi stock had fallen by around 90% from its peak. Law fled the country, leaving behind both his family and fortune. His great System – which has been described as the most ambitious economic experiment prior to the Russian Revolution of 1917 – was in ruins. He died nine years later in Venice.

#### **BOTH SWINDLER AND PROPHET**

The collapse of the Mississippi Bubble put the French off central banks and the techniques of modern finance for the rest of the eighteenth century. Some might think that a good thing. But it meant that France was forced to borrow at much higher rates, which put her at a severe disadvantage to her English rivals. “The Battle of Plassey was won in Exchange Alley and the Heights of Abraham fell to the clerks of the Bank of England,”<sup>9</sup> writes James Buchan. Eventually Law’s dream of a purely paper money was realised after the collapse of Bretton Woods, some 250 years after Law’s System had collapsed. Karl Marx’s verdict on Law as having that “pleasant character mixture of swindler and prophet” appears just.

Modern central bankers appear not to have heeded the lessons of Law’s failure. They are, to adapt Keynes’s famous phrase, the “slaves of a defunct economist.” “What central bankers are doing now is exactly







10 Antoin Murphy (2017), *John Law: A Twenty-First Century Banker in the 18th Century?*  
 11 Richard Cantillon, edited and trans. by Henry Higgs (1964), *Essai sur la Nature de Commerce en General*  
 Image Sources: Top: PRISMA ARCHIVO / Alamy Stock Photo. Bottom: Richard Levine / Alamy Stock Photo

what Law recommended,” writes another of Law’s biographers, Antoin Murphy. “From this perspective, [Murphy adds] it may be argued that, notwithstanding the failure of the Mississippi System, Law’s banking successors have been Ben Bernanke, Janet Yellen and Mario Draghi.”<sup>10</sup> I have great admiration for Professor Murphy’s scholarship but this notwithstanding Law’s failure sounds like the economist’s equivalent of “other than that Mrs Lincoln how did you enjoy the play?”

Once one starts looking for them, the parallels between the Mississippi saga and monetary experiments in the post-Lehman world are all around us. Both episodes start with a financial and economic crisis and the threat of deflation, both are followed by a miracle monetary cure, which inflated bubbles across various asset classes. At points in 2018, the US stock market was trading at a higher valuation than at any time in its history with the exception of the dotcom bubble. On a dividend yield basis, the S&P 500 remains somewhat more expensive than the Mississippi stock at its peak. We’ve even witnessed the birth of another new currency. Although personally, I’d take Law’s bank notes over bitcoin.

There were many problems with Law’s System. He was never much of an operations man. After fleeing France, Law wrote to the Regent, “I have always hated work” – rather a failing for someone attempting to manage the largest corporation in history. From a monetary perspective, Richard Cantillon identified another fatal flaw: “If the Bank alone raises the price of the public stock by buying it, it will be so much depressed when it resells to cancel its excess issue of notes.”<sup>11</sup> Those who believe the US Federal Reserve can reduce its balance sheet – what’s called

quantitative tightening – without a severe mishap should pay attention.

## CHINA TODAY

The parallels between Law’s System and recent financial developments in China are even more compelling. The People’s Republic, like eighteenth-century France, remains an absolutist state, ruled by a privileged class, unbound by the rule of law. The Mississippi Company resembles every Chinese state-owned enterprise rolled into one. Law’s experience showed that absolutism and modern finance don’t mix. China has also experienced an extremely loose monetary policy. The People’s Bank has for years maintained its policy rate at a level far below the country’s rate of economic growth.

Thanks to these low interest rates, credit in China has expanded rapidly and the aggregate value of Chinese real estate has climbed to around four times GDP, according to estimates from property firm Savills. This puts the value of China’s housing stock roughly on a par with Japan’s aggregate property valuation towards the end of its Bubble Economy in the 1980s.

A final thought. China, like France in Law’s day, operates a currency that is fixed on the foreign exchanges. Yet its money supply has soared relative to the rest of the world, just as France’s did during the Mississippi bubble. How long, one wonders, will it be before this monetary dam bursts? ●

# Going for a Song



PAPER MONEY WITH CHINESE CHARACTERISTICS. THE STORY OF A BANKNOTE IN THE RUFFER COLLECTION.

**ZHIRAN LI***Research Associate*

**WHAT SPRINGS TO MIND WHEN YOU READ 'MADE IN CHINA'?** Perhaps electronics, garments or plastic toys.

Historically, it has been a marque of ingenious invention. Gunpowder, silk, mechanical clocks and moveable-type printing: all appeared in China long before they appeared elsewhere. Lesser known, but perhaps more important than all other innovations combined, is the invention of paper money – the foundation of our modern credit-driven economies.

## FLYING CASH

Currency has existed in China for over three millennia. Qin Shi Huang, the first emperor of a unified China, introduced the earliest uniform currency in the third century BC: *Ban Liang*, round copper coins with square holes in the middle. Signifying the union of heaven (round) and earth (square). This style survived into the twentieth century.

Paper money came later, during the Tang Dynasty (618 – 907 AD). *Ban Liang*'s successor coins were of low individual value. They tended to be strung together with rope, to create larger denominations (1000 coins = 1 *guan*, or string). Less purse strings, more string purse!

This was fine for small transactions, but unwieldy for trade. Hauling cart-loads of hard currency over long distances was impractical and dangerous, given that hard currency often fell victim to bandits. Enter paper credit notes – easy for merchants to fold and carry. The first standardised notes represented 1,000 coins or 1 *guan*. The 1000-coin string was the only state-recognised unit of monetary accounting at that time. In the marketplace, the basic accounting unit was lower: 100. In reality, however, 'a hundred' never meant as much as 100. Each industry had its own arrangements, and on average the cash backing for a hundred declined over time.

Merchants started to leave hard cash – or commodities, often salt – with early deposit holders (typically wealthy families) in exchange for receipts, or compensation notes, similar to modern-day bank drafts. These notes were called *jindai guanzi*, and nicknamed 'flying cash'.

With growing adoption by merchants, the Tang authorities, after early resistance, accepted money for tax payments (rather

than insist on taxes being paid in produce, for example). Shortages of coin and copper made a paper alternative particularly attractive. By the ninth century, the Tang authorities were settling some accounts using paper. But while *jindai guanzi* could be converted into hard cash, they were never legal tender. They were strictly limited for use in merchants' transactions between distant places.

## THE PAPER NOTE BANK

The tenth century was a period of repeated upheaval in China. The Tang's rule ended, and was eventually replaced by the Song Dynasty (960-1279 AD). It's here that we first encounter true paper money.

*Jiaozi*, or exchange certificates, first emerged in Chengdu, capital of Sichuan in southwest China. The earliest banknotes did not have standardised denominations, but were instead tailored to specific commercial transactions by the issuing merchants. There was no limit on value.

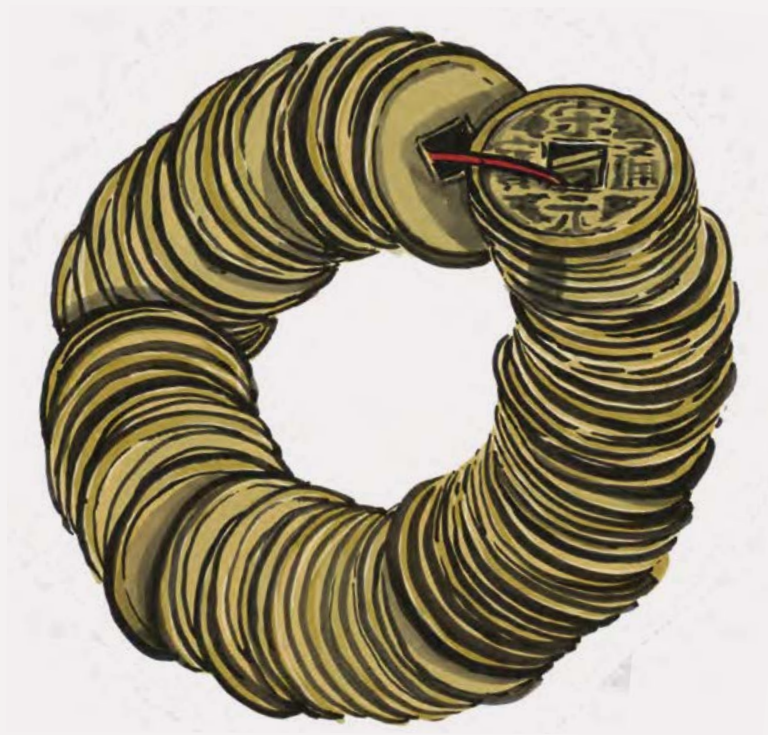
“ This paper currency is circulated in every part of the Great Khan's dominions, nor dares any person, at the peril of his life, refuse to accept it in payment.”





In the beginning, all *jiaozi* were high-denomination notes and thus impractical for everyday use. After several years, in 1007, the 16 biggest note-using merchant houses jointly formed the regional Paper Note Bank (*Jiaozi Hu*), leading to increased standardisation of currency. Following several bankruptcy scares early in the eleventh century, the Paper Note Bank's money-issuing function was nationalised. In 1023/4, the government's newly-formed National Paper Notes Office (*Jiaozi Wu*) took over. It became the world's first central bank, and set about formally standardising





“ How the Great Kaan  
 Causeth the Bark  
 of Trees, Made Into  
 Something Like  
 Paper, to Pass for  
 Money All Over his  
 Country.”

currency denominations, and printed the first batch of *jiaozi* empire-wide.

As in the Tang era, local authorities accepted the notes as a form of payment for taxes. Currency joined a growing list of imperial monopolies, including salt, tea and alcohol. State-led development is nothing new in China.

Just as state-sponsored paper money production was ramping-up, so was that of hard cash. Experts believe peak production was reached around 1073, when a staggering 6 million strings of coins were minted. Chinese coins were accepted across much of South East Asia, and became the trade currency of choice. Even so, by the 1100s paper money had overtaken coins in significance, with millions of notes in circulation.

Although *jiaozi* were time-limited – typically for two or three years – and the notes were backed by hard currency, serious inflation took hold nonetheless. The authorities failed to hold enough metal coin to back the full value of paper currency in circulation. In 1160, after the Song emperor lost control of the northern territories and retreated to the south, *jiaozi* were gradually replaced. By this point, the Song Dynasty was in terminal decline. Much copper currency was flowing away over the northern

border, further eroding the backing for the ever-increasing issuance of paper money required to fund the army against invaders. Hyperinflation took hold as confidence in paper money ebbed.

### A GREAT KAN CAUSETH

At the other end of the Silk Road, the Knights Templar – holy warriors with a sideline in banking – began issuing depositary receipts to travelling pilgrims in the twelfth century. When the faithful reached the Holy Land, they could exchange their notes for cash. Yet it wasn't until the seventeenth century, more than 500 years after China, that paper currency was widely adopted in Europe.

Back in China, the Song were finally overwhelmed in 1279 by the Mongolian Yuan Dynasty led by Kublai Khan, grandson of Genghis. The Yuan introduced the world's first pure paper currency: the *chao*. As a fiat currency, the *chao* had no intrinsic worth; its value was derived from government writ. *Chao* notes had no expiry dates. Unlike earlier paper currencies, they were not backed by metal. Hyperinflation ensued.

Sometime in the early 1270s, the Venetian explorer Marco Polo met Kublai Khan in what is now Beijing. In his travel diaries, Marco Polo devoted an entire chapter to Chinese paper currency: “How the Great Kan Causeth the Bark of Trees, Made Into Something Like Paper, to Pass for Money All Over his Country.”



### MINGBI, SPIRIT MONEY

Beyond the practicalities of everyday trade and administration, paper money also became a matter of (after) life and death. In Chinese tombs, archaeologists have found examples of paper money replacing coins as early as the sixth century.



大明通行寶鈔

壹貫



大明通行寶鈔

大明通行寶鈔

無地外道

戶部

大明寶鈔銀錢通行

便所偽造者斬

者與寶鈔同

付給犯人財

十月廿日

## “The real dragon to be slain was inflation.”

Polo underlines the importance of powerful government to a fiat currency: “This paper currency is circulated in every part of the Great Khan’s dominions, nor dares any person, at the peril of his life, refuse to accept it in payment.”

Amid famine, domestic unrest and disease, the Yuan Dynasty fell to a revolt led by Zhu Yuanzhang. Zhu went on to become the Hongwu Emperor and founder of the Ming Dynasty (1368-1644 AD).

### ON A WALL IN VICTORIA

At Ruffer, we have a modest sideline in scripophily – or the collection and study of historic bonds and share certificates – and numismatics, the equivalent for currencies. Our collection contains a near-A4 sized bank note from Hongwu’s reign (Emperor Zhu Yuanzhang), dating from the 1380s. A photograph of this note is on the facing page.

The note has a face value of one *guan* – literally “one string”. The note bears a legend that can be translated as Great Ming Circulating Treasure Certificate. It carries the emperor’s name as well as that of his finance minister. Other text warns of death for forgers, and offers a reward to those who turn in the counterfeiters (a significant quantity of silver, plus all the belongings of the counterfeiter). Earlier

banknotes specifically promised decapitation for offenders.

With confidence befitting the Middle Kingdom, the note optimistically states it will “circulate forever”. Six-and-a-half centuries on, it’s not doing too badly.

Decoratively embellished with images of ten 100-coin chains (its nominal value), there are two seals in red, vermilion ink (made from powdered cinnabar). Faded dragons patrol the borders. The note’s grey-blue paper is made from the bark of the mulberry tree, grown in the Valley of the Yellow River for millennia.

To maintain its value, the new Ming currency advertised its convertibility: “Whenever paper money is presented, copper coins will be paid out. And whenever paper money is issued, copper coins will be paid in. This will never prove unworkable. It is like water in a pool.”<sup>1</sup>

Like regimes throughout history, however, the Ming proved unable to resist printing more money. The real dragon to be slain was inflation, which returned with a vengeance. Just 15 years after first being issued, the Ming notes had lost three-quarters of their original value. The Ming government gave up on paper currency in the 1420s. Silver – much of it acquired through trade with the Spanish Empire – gradually took its place. It was another four centuries before a different Chinese government would issue paper currency. ●

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- National Bank of Belgium





**JAMIE  
DANNHAUSER**

*Economist*

# Make America

**OUR ERA OF PRICE STABILITY  
IS COMING TO AN END. EXPECT  
REGIME CHANGE, AND A MORE  
INFLATIONARY FUTURE.**

**THERE ARE LESSONS FROM  
1960s AMERICA.**

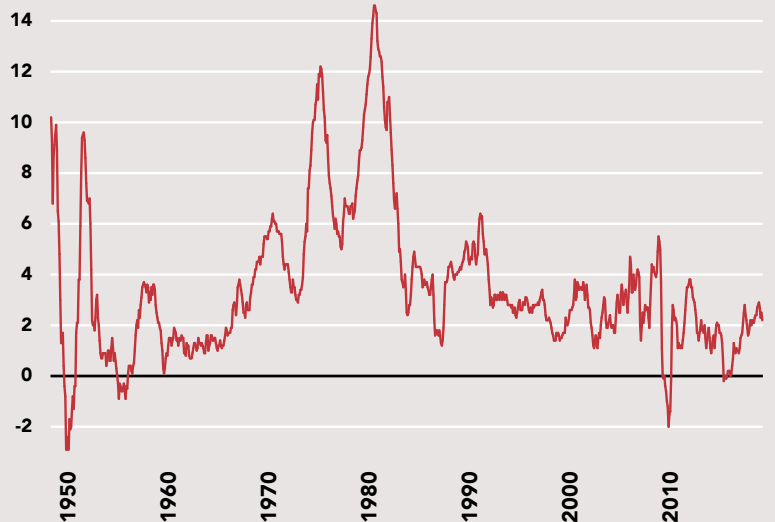


# Inflate Again

## THROUGH THE FIRST HALF OF THE

**1960s**, US inflation was low and stable, averaging 1.5%, a little below what today would be considered price stability. Despite rapid output growth – real GDP increased, on average, by 6% a year in the period 1960 to 1965<sup>1</sup> – there were minimal inflationary pressures. Over the next few years all that changed. By the end of 1969, headline and core inflation had both risen to 6%. The 1970 recession halted inflation’s advance – but only temporarily. After dipping to 3% in 1972,<sup>2</sup> inflation quickly reaccelerated. The rest is history...

US HEADLINE INFLATION RATE %



<sup>1</sup> US Bureau of Economic Analysis

<sup>2</sup> US Bureau of Labor Statistics

Source: Bureau of Labor Statistics

The monetary disorder of the 1970s was unique. Individual countries had suffered bursts of high inflation before (and have since). Some had endured hyper-inflations. But there is no equivalent period during which so many nations simultaneously suffered runaway inflation. The 1973 oil shock, intransigent labour unions and complacent policymakers all rightly receive their share of the blame. But any credible analysis of 1970s inflation must acknowledge that the seeds of monetary disorder were sown a decade earlier. It was the overheating US economy of the second half of the 1960s, and the Fed's failure to lean against Lyndon Johnson's fiscal expansion, that allowed inflationary forces to take hold – forces that hastened the downfall of the Bretton Woods system. Once currencies' anchor to gold was broken, the existing international monetary and financial order was fatally wounded.

It was not until after the 'Volcker squeeze' in the early 1980s that stability was restored. Since then, in much of the world economy, inflation has been low and stable, credit for which is partly owed to independent central banks. The financial crisis in 2008 did not unleash the deflationary bogeyman. Despite unprecedented policy stimulus, during and after the crisis, there has not been a surge in inflation either.

### **THE ROAD WE'LL TRAVEL**

Our main contention here is that this era of price stability will soon be at an end. And this is unlikely to be just a US phenomenon. We are on a journey to a more inflationary

future, one that began long before the financial crisis in 2008. Somewhat counter-intuitively, this journey will first lead us into another deflationary slump. It will be the political response to that slump which breaks the existing regime. This rupture will involve a radical shift in the aims and instruments of macroeconomic control, including a challenge to central bank independence. More broadly, it will threaten the liberal, multi-lateral world order that has underpinned the global economy's advance since the inflationary quagmire of the 1970s.

The economic, political and market environment today is different in many important respects from that of 50 years ago. But there are also eerie similarities with the second half of the 1960s, when the foundations of post-war stability were undermined. It was the cyclically-driven upswing of US inflation beginning in the middle of the decade, and the Fed's failure to lean against it, that undermined the dollar's link to gold. By the time of the Nixon shock in 1971, the breakdown of the existing regime was in train: inflation was already embedded in the fabric of the US economy. As such, both the 1973 spike in oil prices and Nixon's annexation of Arthur Burns' Fed a year earlier are best seen as triggers, not underlying drivers, of the subsequent economic chaos.

It is only with hindsight that we can appreciate the critical role of policy failings in the 1960s. But even now it is unclear exactly why inflation took off when it did – and with such force. Modern economic theory assumes

3 Milton Friedman (1963), *Inflation Causes and Consequences*  
 4 For a good example of a challenge to the consensus, see BIS Working Paper No. 706.  
 5 A point made forcefully, and somewhat controversially, by Jon Faust and Eric Leeper at the 2015 Jackson Hole conference.  
 Source: Refinitiv, Ruffer calculations, Philadelphia Fed Survey of Professional Forecasters

inflation rises slowly and linearly once an economy moves beyond full employment. The historical record suggests this may be true *within a regime* of low and stable inflation. But it is manifestly not how inflation behaves when the existing inflation regime is breaking down, as happened in the 1960s.

### WAS MILTON FRIEDMAN WRONG AFTER ALL?

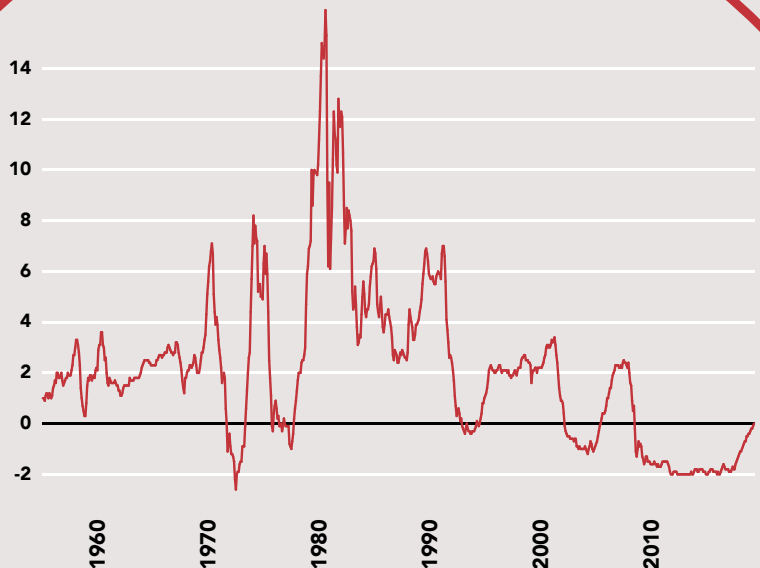
In practice, economists know surprisingly little about what drives inflation. Milton Friedman taught us that “inflation is always and everywhere a monetary phenomenon”.<sup>3</sup> In one sense, he was spot on: *sustained* periods of high inflation are the product of *unsustainably* rapid monetary growth. In another sense, though, his dictum has been a distraction.<sup>4</sup> In the era of inflation targeting, monetary forces have proved to be a poor guide to inflation dynamics.<sup>5</sup>

This inability to forecast inflation, and possibly even understand its dynamics *ex-post*, has altered how central bankers behave in two key ways. First, when making forecasts and setting policy, central banks now give far greater weight to *current* developments in price and wage inflation. Second, by reducing the perceived dangers of low

unemployment (until there is clear evidence of its effect in wage growth). Because inflation has persistently surprised to the downside and pay growth has remained contained, a future period of above-target inflation has been viewed as low risk, while the dangers of depressed inflation have been amplified.

Long gone, it would appear, are the days of “long and variable lags”, where central bankers would look to normalise policy before the economy had reached full employment. They may not be willing to wait until the “whites of inflation’s eyes” become visible (as Larry Summers suggested in 2015) but policy has become highly reactive to past inflation and wage growth. Persistently sub-par inflation has given the upper-hand to the so-called doves in all the major central banks. And it has provided ammunition for those arguing that policymakers should press hard on

### US EX-ANTE REAL SHORT-TERM INTEREST RATE %





the accelerator, until there is categorical evidence that inflation is returning to target. Indeed, this is the explicit strategy of the US Federal Reserve under Jerome Powell.<sup>6</sup>

The Federal Reserve is now withdrawing stimulus and looks set to go further in this cycle. Powell's Fed may be less dovish than Janet Yellen's but it is still treading carefully. Short-term real interest rates are around zero, far below historic norms; and, if at all, they will only rise gradually. To anyone with a broad view of economic history, it will seem remarkable that US interest rates are so low (and the Fed's balance sheet so bloated) in the context of sizeable fiscal stimulus and an unemployment rate just shy of its 50-year low. History would suggest that by now in the cycle one would want macroeconomic policy to be restricting growth.

We have been here before, in the late 1960s. While the reasons have differed in each cycle, the Fed has systematically failed to engineer soft-landings in the post-war period. Policy has moved too little, too late. On some occasions, the cycle has been brought to an end because of rising inflation. On others because of financial excess. Repeatedly, the brakes have been applied hard and fast, late in the cycle, long after economic imbalances have emerged.

Once again, the Fed is underestimating the danger of an overheating economy. A tightening of financial conditions is necessary to slow the economy. That the Fed appears to be blinking (hesitating to tighten further) is telling. It once again reiterates central bankers' overwhelming fear of the

deflationary ditch and the asymmetry at the heart of monetary policy.

This matters because Fed guidance about inflation and the path of interest rates anchors financial markets. Little wonder then that investors attach little weight to the possibility of even a limited burst of above-target inflation. Yet, we have an openly protectionist US president. Leading an administration now devoid of its moderate, globalist faction. An administration that is loosening the fiscal reins at a time of still supportive monetary policy and sub-4% unemployment.

Pricing in bond markets suggests a remarkable degree of confidence in the ability of the Fed to steer the economy to safe harbour.

## WHAT MIGHT WE LEARN FROM THE PAST?

The long sweep of history tells us two things about inflation. First, the economy operates within distinct inflation regimes. These tend to be long-lasting, often encompassing numerous business cycles. Within each regime, the political and policy backdrop shapes the average level and volatility of inflation.

Shifts in the inflation regime go hand-in-hand with economic disruption. They cannot be disentangled from the political dynamics of the day. Consider the breakdown of the Gold Standard after World War I; the creation of the Bretton Woods system after World War II; the slow collapse of Bretton Woods from the mid-1960s; the fight

6 See, for example, Powell's comments at the September 2018 FOMC press conference.

# “Shifts in the inflation regime go hand-in-hand with economic disruption. They cannot be disentangled from the political dynamics of the day.”

against inflation through the 1980s; and the move to independent inflation-targeting central banks from the early 1990s. In each case, the end of the existing monetary order and the emergence of a new anchor for macroeconomic policy had its roots in political developments. Importantly, for our purposes, there was also a clear shift to a new inflation regime.

The second observation is that when resource utilisation is high and persistent, it will generate inflation and/or imbalances within the economy. The link between them is likely to be far more complex than the simple Phillips curve model implies. Nevertheless, running the economy hot will eventually cause problems to emerge.

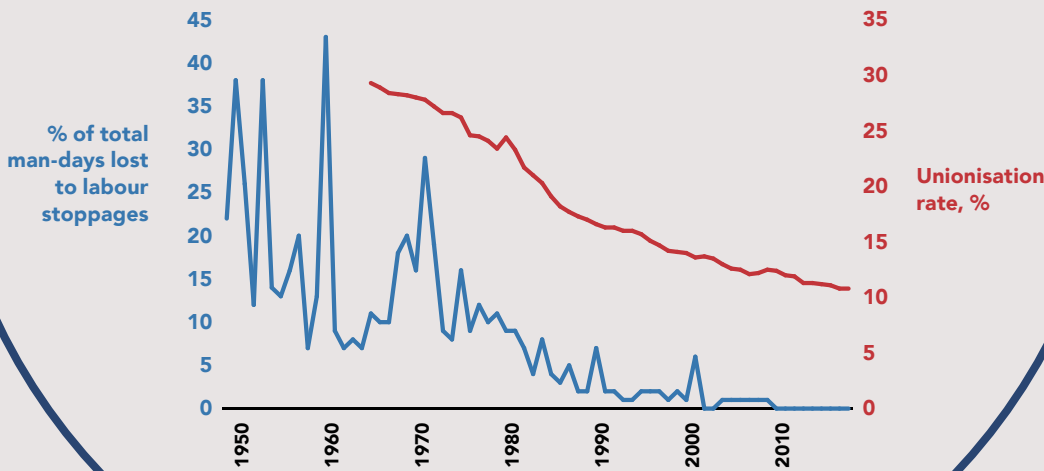
This need not trigger a break in the underlying inflation regime. Indeed, the more common pattern is for monetary tightening, in response to rising inflation, to trigger a recession, thereby keeping the

economy within the existing regime. Yet it might break the regime – and has in the past, especially when combined with malign social and political dynamics that threaten the existing policy order.

Put differently, the economy operates within a corridor of stability much of the time – but every now and then, a shock pushes the economic system to a point where destabilising, reflexive forces come to dominate. Normally, policy is able to stabilise the economy without material disruption or political upheaval. But over time the corridor can narrow. This could be because financial imbalances are building under the surface (as Hyman Minsky argued); because an inflationary bias is becoming embedded in the system (as Milton Friedman believed); or alternatively, because the political backdrop is becoming more hostile to the existing policy regime. The more malign the political dynamics, the



## US UNIONISATION RATE AND LABOUR UNREST OVER THE LAST 60 YEARS



narrower the corridor will become – and the smaller the cyclical shock required to unleash destabilising forces.

### WILL A FED POLICY ERROR BREAK THE EXISTING REGIME?

How narrow has the corridor become today? Might current Fed policy be creating the inflationary dry-tinder that will bring down the existing inflation regime, as it did 50 years ago?

Much has changed over the intervening half century, culturally, politically and economically. In the 1960s, economies operated within the Bretton Woods fixed exchange-rate system. Cross-border capital flows, especially portfolio and banking flows, were heavily restricted. Fiscal policy was used more actively to manage aggregate demand. Monetary policy was geared to

minimise pressures on the exchange rate, as much as it was used to steer growth.

Meanwhile, the supply-side of the economy operated very differently. By the mid-1960s, there had been two decades of post-war reconstruction, involving rapid productivity growth and expansion of the capital stock. The underlying, sustainable pace of growth was higher than it is today. In addition, goods production was a much bigger slice of aggregate economic activity: since goods prices tend to be less sticky than those in the service sector, there was a natural tendency for overall inflation to be more volatile.

In the labour market, trade unions had much greater influence in the wage-setting process. One-third of the US workforce was unionised. Compared with today, there was a closer link between past inflation and

7 US Bureau of Labor Statistics

8 Goldman Sachs Research

9 US Bureau of Labor Statistics

10 Federal Reserve Board, US Bureau of Labor Statistics

current pay growth, and greater sensitivity of wages to the unemployment rate. In short, any trend in inflation was more likely to persist into the future.

But for all these differences, there are similarities in the macroeconomic and policy environments then and now. Most notably because of the very low rate of unemployment, emerging after a prolonged period of unusually low inflation. Only 3.7% of the US labour force was unemployed in November 2018.<sup>7</sup> Available indicators suggest US jobs growth is running well ahead of its steady-state level of 80,000 to 100,000 net new jobs a month.<sup>8</sup>

### ENTERING THE ARCHIVES

The transcripts and minutes of the Fed's rate-setting Federal Open Market Committee (FOMC) meetings 50 years ago are instructive. It is clear that the lack of an inflation response, as unemployment fell rapidly from 1963, strongly influenced policymakers' attitude to the cyclical state of the economy. For the Fed, there was no apparent urgency to lean against rising inflation after 1965.

The committee's debates towards the end of 1966 are notable. By then, core inflation had climbed to 3.5%<sup>9</sup> (from 1.25% a year earlier) and unit labour costs were advancing quickly. Spending on the Vietnam War was rising sharply. And there were suspicions of more fiscal stimulus than was being officially documented at the time.

Although the 1966 jump in inflation was clearly a concern, softening demand in the private sector left the Fed comfortable that it had done enough by tightening policy earlier in the year. Indeed, by spring 1967 it was actively loosening monetary policy – a major blunder as it turned out. By year-end, the economy was once again booming, credit growth was rising sharply and inflation had reached 4%.<sup>10</sup> The die was cast...

Much the same complacency is evident on today's FOMC. Sluggish wage growth and on-target inflation in the context of low unemployment are seen as convincing evidence that inflation risks are low. Inflation is forecast to rise very gradually, overshooting the target by a minimal, almost absurdly small, amount. It seems to us that the FOMC is once again consumed by

“ It is true that economic regimes don't die quickly: they wither.”

“Whoever wishes to foresee the future must consult the past; for human events ever resemble those of preceding times.”

Niccolo Machiavelli, *The Prince*, 1532.

an unjustified degree of confidence that the US can avoid a meaningful burst of cyclical overheating.

One obvious malign development common to both periods is late-cycle fiscal expansion. Under Lyndon Johnson, the US saw a massive fiscal loosening in the late 1960s, notably in 1966 and 1967 when the stimulus from surging government spending dwarfed the headwinds from tax hikes.

The fiscal loosening taking place currently – both the Tax Cuts & Jobs Act and increased Federal spending limits – is certainly smaller in magnitude. But it is nonetheless sizeable and its stimulatory impact skewed to the upside, given the dramatic reduction in individual and corporate marginal tax rates.

### ASSESSING LIKELIHOODS

We don't want to overplay the comparison between today's economic environment

and that of the late 1960s, nor suggest that the earlier period offers a cast-iron guide to where US inflation will head over the next few years. A sustained burst of high inflation (>5%) will require a dramatic shift in macroeconomic policy and the US political backdrop.

However, there are undoubted similarities and lessons to learn.

Neither financial markets nor the Fed view a sustained period of above-target inflation – say, core PCE inflation above 2.5% – as remotely likely. Yet, there remains considerable uncertainty about why central banks have found it so hard to push inflation back to target. And we know little about the behaviour of inflation when unemployment drops to a very low level. The experience of the 1960s suggests prices and wages can accelerate rapidly, without any obvious trigger, when the economy is overheating and macroeconomic policy fails to lean against the boom.<sup>11</sup>

It also suggests that changes in the structure of the economy can have an outsized role in shaping the inflationary backdrop. Rapid, capex-driven productivity growth was a powerful disinflationary force after World War II. This hid from view the build-up of cyclical inflation risks through the 1960s. For much of the past 30 years, there have also been slow-moving, but nonetheless powerful, forces bearing down

<sup>11</sup> Work by staffers at the Federal Reserve Board suggests some concern internally about a prolonged period of very low unemployment. See, for instance, Nalewaik (2016).

on inflation: the expansion of the global labour force aided by China; the economic liberation of Eastern Europe; competitive gains from globalisation and technology; headwinds from the credit crisis in 2008; the political support for a free and open global trading system; and the effect of the baby-boom generation on countries' age structure.<sup>12</sup> Some of these shifts have gone into reverse (such as demography), others have merely stalled. At a minimum, the disinflationary tailwinds of the last three decades are blowing more softly.

Almost all of the current debate is about the path of inflation in this cycle, focused on the magnitude and persistence of the cyclical impulse to inflation. Yet there is a far more important question – is this impulse strong enough to undermine the existing inflation regime? It was in the 1960s. We think it might be this time around. And it's a scenario financial markets are ill-prepared for.

The 1960s should serve as a reminder that an inflationary impulse can build slowly and undetected over a long period; and that, once unleashed, it can be very hard to contain. The Fed was forced to engineer a recession in 1970, raising rates by five percentage points between 1967 and 1969. It was the biggest macroeconomic shock since 1958 but failed utterly to rid the US economy of its inflationary bias. The high-growth, low-inflation regime gave way to something more malign. With this new regime came new dynamics in financial markets. Inflation risk was re-introduced to the world's risk-free asset.

## A CHALLENGING EXIT

This will not happen overnight. In our view, the real inflationary danger is not as we head into the next downturn, but as we exit from it. It is only once we have again stared into the deflationary ditch that the dominant policy paradigm can be challenged – and overthrown. This is the moment when the rules-of-the-game will change, possibly abruptly.

It is true that economic regimes don't die quickly: they wither. The existing economic order might fracture in this business cycle, or the next. The current cyclical upswing in US inflation may be snuffed out as the Fed tightens policy more aggressively than the markets anticipate. It's possible, in the resulting recession, that policymakers do resist the siren calls of populism, responding in a conventional manner, and accepting the inevitably slow rebound in output and employment.

Yet it would be unwise to bank on this. To us, it seems more likely that the existing policy regime faces a full-frontal assault in the next recession. When monetary policy fails to bring about a strong recovery, it will be seen to have failed. What the political consequences will be, and how quickly they unfold, are uncertain. But the contours of the next post-recession phase seem evident. The populist charge-sheet has already been written: the liberal elite will have, once again, bailed out friends on Wall Street, printing money to prop up their wealth;

<sup>12</sup> See Jusefius & Takats (2018).



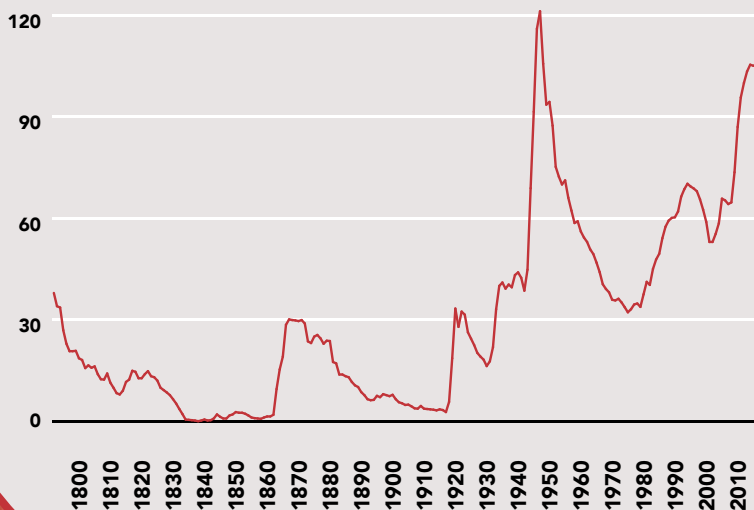
global financial markets will have been supported at the expense of hard-working families; and experts will be recommending punishing austerity, so that foreign bond-holders can be repaid...

How might this play out? First, given the lack of conventional monetary and fiscal ammunition, we believe unconventional weapons will be used to fight the next downturn, and that their unpopularity will deepen. Second, any recovery will be slow and fragile. Third,

public anger will be directed towards those deploying these weapons. Fourth, populists will be emboldened, accelerating the disintegration of liberal, centre-ground parties across the West.

The stage will be set for a radical rethinking of macroeconomic policy. Can central bank independence survive in its current form? It is hard to envisage an inflationary rupture in the existing regime without the effective end of operationally-independent central banks.

### HISTORIC US PUBLIC SECTOR DEBT, % OF GDP





# “ The stage will be set for a radical rethinking of macroeconomic policy.”

## TOWARDS HELICOPTER MONEY

Populists will surely ask: if central banks can print money to buy financial assets, why can't they do the same to finance higher government spending and tax cuts? This opens the door to a far more radical menu of options to support the economy and jobs. So-called helicopter money – more accurately, money-financed fiscal expansion – would seem but another step on the policy journey that began in 2008.

But this step will likely be taken in uncompromising circumstances, with the reputation of the technocratic elite trashed. More a forced takeover of the central bank by the state than harmonious co-operation between the monetary and fiscal authorities.

With this comes a change in the rules of the game. Less focus on price stability, and more on maximum employment. Less concern about the perils of high inflation, and more about the long-term damage from low investment and high unemployment. Less use of interest rates to guide the economy; more active intervention in the credit system. Less tolerance of cross-border capital flows; more active use of the exchange rate to support demand. And so the list continues.

In short, we would be in a new, more inflationary, policy regime. Investors must be alive to this very real possibility – and build portfolios that protect wealth should we find ourselves there. ●

# The Book Corner

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Takes on three books, by three people at Ruffer. A mix of personal favourites and topical insight, with some utility for investors.

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## **WIN BIGLY**

*by Scott Adams*

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## **THE FORGER'S SPELL**

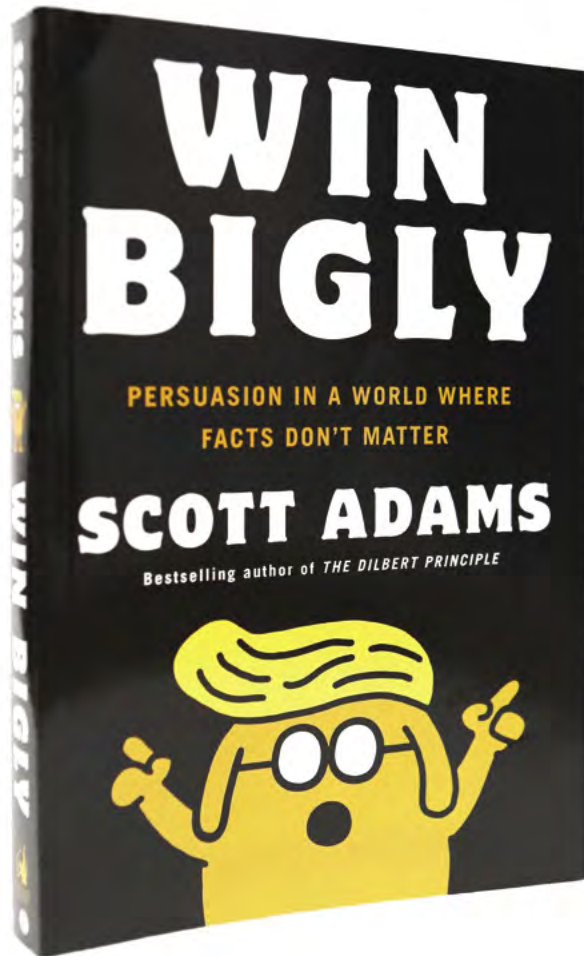
*by Edward Dolnick*

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## **DISRUPTED**

*by Dan Lyons*

**PAGE 92**



**WIN BIGLY**  
*by Scott Adams*

PORTFOLIO / PENGUIN 2017

## *Trump through new eyes*

**WHAT DO YOU REMEMBER ABOUT THE US PRESIDENTIAL ELECTION IN 2016?** The wall? “Bill Clinton said far worse to me on the golf course”? Crooked Hillary? Red hats declaring Make America Great Again?

In *Win Bigly*, Scott Adams presents these not as the rantings of a maniac who won an election despite himself, but as the deliberate acts of a “Master Persuader”.

Trump brushed aside everyone in his race to the White House. You might not like him, or his policies, but Adams brings a new lens in understanding Trump’s victory.

Adams is a keen student of hypnosis, marketing psychology and persuasion, and the creator of the popular Dilbert cartoon strip. In Trump, he saw someone with an uncommon ability to harness powerful persuasion techniques: he

predicted a Trump victory before Trump had even secured the Republican nomination.

*Win Bigly* summarises, reflects on and reorganises the commentary that Adams blogged and tweeted during the election campaign. Adams watches Trump take down one opponent after another, while giving his own direct take on events.

Critics in the chattering classes saw fourth-grade English; Adams saw language perfect for winning an election. Trump's deliberate exaggeration and use of visual imagery resonated far more than detailed policy prescriptions and debates. After all, which of Clinton's policies can you remember now?

Adams notes how, while Trump hammered on about The Wall, he also talked *sotto voce* about the practicalities and nuances. The Wall was simply shorthand, and very effective electoral shorthand, for "I have a tough policy on immigration".

For Adams, Trump is to be taken seriously but not literally. Many of Trump's detractors got this the wrong way around: they took him literally, and failed to take him seriously.

## TRUMPED BY TECHNIQUE

*Win Bigly* has a somewhat surreal and multi-layered feel. Readers can find themselves being persuaded by Adams' use of the very persuasion techniques he is commenting on. And we watch as Adams himself is persuaded by Trump. He admires Trump's persuasion techniques, as well as the impact of the techniques themselves, an impact not even a "trained persuader" like Adams can resist.

All the time we are pulled along for the ride, with everything from the occasional cartoon to a tongue-in-cheek dedication from Alexander the Great: "Scott taught me how to create a persuasive nickname for myself."

Given the direct writing style and the pacy narrative, readers can learn much about persuasion in a lot less time than is needed for some of the other classics on the topic, such as Robert Cialdini's *Influence* – itself a must-read for defence against the dark arts of marketing.

## CONFIDENCE BOOST

The book triggers several investment thoughts. First and foremost, politics matters, and it matters a great deal more now than it did pre-2008. Books like *Win Bigly* help investors better understand the political landscape, and leave us better placed to anticipate political earthquakes and their consequences. During the 2016 campaign, it would doubtless have been useful to follow Scott Adams' commentary, and to consider his line of thinking, alongside the likes of the then-fashionable statistical analysis of Nate Silver at Five-ThirtyEight.



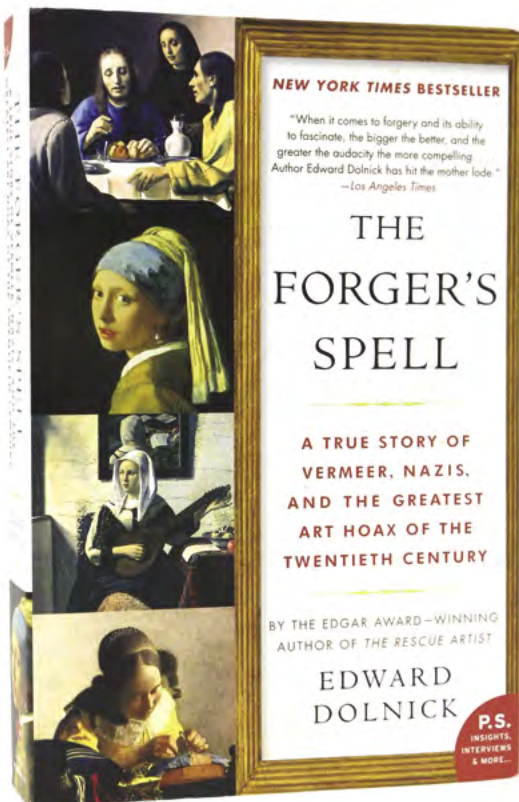
“ Trump’s deliberate exaggeration and use of visual imagery resonated far more than detailed policy prescriptions and debates.”

From an economic point of view, there has been a sizeable Trump effect. Economic confidence surged in the US following Trump’s 2016 victory, and with it economic growth. This is a remarkable real-time test of just how much confidence matters to economic outcomes, as Keynes always stressed. Confidence can turn on a sixpence. Per Adams’ narrative, Trump, the Master Persuader, has made people believe he will Make America Great Again – and this has become a self-fulfilling prophesy. It seems persuasion can be as powerful as conventional fiscal and monetary tools.

Finally, when looking at stock ideas for portfolios, an awareness of powerful persuaders – both in being able to motivate employees, and to project the brand – is a useful additional factor to consider when assessing a company’s management. Adams cites Steve Jobs at Apple as an example. Ryanair’s Michael O’Leary may be another – did he ever really expect people to pay for using the toilet on flights? Or was he just persuading us that Ryanair is the cheapest way to fly?

**JON DYE**

*Head of Research*



## THE FORGER'S SPELL

by Edward Dolnick

HARPERCOLLINS 2008

## *A talent for deception*

**CONFIDENT EXPERTS OFFER SUPERLATIVE PRAISE.** Clever salesmanship pushes high prices higher. Wealthy buyers compete to own something of seemingly permanent value. Until a new fact emerges. And the highly-priced assets command high prices no more.

This is not a tale from the financial markets – no Enron or Madoff – but the story of an art forger, Han Van Meegeren. In *The Forger's Spell*, Edward Dolnick gives us a technicolour account of Van Meegeren's life – part-history, part mystery, part-thriller.

Van Meegeren was born in 1889 in the Dutch town of Deventer. As a student in Delft and The Hague, he became a competent artist. In his own mind, he

was a great painter. Art critics saw him as technically able but lacking depth or originality. In the words of one reviewer, his paintings of Christ are “often insipid and sweet, sometimes miserably forsaken, always weak and powerless”.<sup>1</sup> Dolnick sees Van Meegeren’s art as marred by “a taste for the cloyingly sweet or the creepily erotic”.

It’s here – in the mythical folk-hero account of Van Meegeren – that a forger is born. Driven by a desire to humiliate his critics, to expose a smug and self-serving elite, Van Meegeren devotes himself to a cause: creating fake masterpieces from the Dutch Golden Age, new works by Frans Hals, Pieter de Hooch and Johannes Vermeer.

For six years in the 1930s, Van Meegeren works tirelessly, tinkering, innovating – using ovens, flower oils, turpentine, Bakelite – until he perfects a formula that gives his paintings the authentic aged appearance of the 1600s.

With a new forgery complete, Van Meegeren’s gifts as a story-teller kick in. In 1937 he tricks a friend into showing his *Christ at Emmaus*, to Abraham Bredius, a prominent art historian and collector. Bredius praises a “delicious Vermeer” and declares himself “in an almost overwrought state of mind, in ecstasy,” at his discovery. The painting sells for what today would be \$2.6 million and is made the centrepiece of a special exhibition at Rotterdam’s Boijmans Museum.

Throughout the Second World War, Van Meegeren continues creating and selling new works by Vermeer and Pieter de Hooch, taking his earnings from forgery to the equivalent of around \$30 million.

In 1943, the myth’s villain appears. Hermann Göring exchanges 137 paintings from his largely-looted collection for one “Vermeer” by Van Meegeren.

“The Forger’s Spell is at its best when bringing us the experts duped.”

“ The scientific evidence – from the composition of the paints to the nails in the frame – pointed overwhelmingly to fraud. Rather than admit he was wrong, de Groot purchased the forgery, then published a book attacking his critics.”

### **A LUDICROUS CLAIM**

It's said that the greatest forgeries are those still hanging, undiscovered, in the homes of wealthy collectors and on museum walls. The discovery of Van Meegeren came not from a forgery-too-far but from the forger's confession. In May 1945, three weeks after VE Day, a Dutch official investigating Nazi collaborators wanted to know how Van Meegeren had come to be involved with a Vermeer in Göring's collection. Van Meegeren gave vague answers, and was arrested.

Dolnick takes us into the jail cell. Van Meegeren “deprived of the cigarettes and sleeping pills and morphine he had come to rely on” is suspected of treason. His crime – selling art to an enemy in wartime – carries the death penalty. After six weeks of questioning, the forger cracks: “Idiots! You think I sold a Vermeer to that fat Göring. But it's not a Vermeer. I painted it myself!” The investigators think this a ludicrous claim. To prove it, Van Meegeren agrees to paint another new Vermeer, before an audience of prison guards and journalists.

Van Meegeren's case eventually comes to trial in 1947. Eight of his forgeries are hung in the courtroom in the Palace of Justice. Charged with fraud rather than treason, he is sentenced to one year in prison. Van Meegeren dies shortly afterwards, without having served a day of his sentence.



## THE POWER OF THE EYE

For investors, perhaps the clearest lesson is on the perils of overconfidence and inflexibility. Dolnick quotes Anatole France: “It is in the ability to deceive oneself that the greatest talent is shown.”

*The Forger’s Spell* is at its best when bringing us the experts duped. Cornelis de Groot, a man with “the prissy pedantic manner of a small-town librarian”, believed firmly in the power of his connoisseur’s eye. He’d vouched for the authenticity of a painting attributed to Hals; auctioneers subsequently identified the painting as a fake. The dispute went to trial. The scientific evidence – from the composition of the paints to the nails in the frame – pointed overwhelmingly to fraud. Rather than admit he was wrong, de Groot purchased the forgery, then published a book attacking his critics.

Bredius, the expert who claimed to have swooned at Van Meegeren’s “delicious Vermeer”, seems to have had private doubts about the authenticity of the painting. Yet to acknowledge these doubts would have damaged his own reputation. In a world where infallible accuracy is the mark of excellence, Bredius doubled-down on his praise. He was furious when two other experts called *Christ at Emmaus* a rotten fake.

Nearly 40 years after Van Meegeren’s confession, Dirk Hannema, an ally of Bredius, continued to believe that *Christ at Emmaus* was Vermeer’s greatest masterpiece.

## AN ENDURING SPELL

Van Meegeren died a popular hero, and this perhaps is his greatest deception.

Dolnick tends to present Van Meegeren as a lovable rogue, a talented hoaxer, a bedfellow of the weavers in Hans Christian Andersen’s *The Emperor’s New Clothes*. Jonathan Lopez, whose life of Van Meegeren<sup>2</sup> was published in the same year as Dolnick’s, shows us the unvarnished forger. A man driven by greed and anger. An anti-Semitic Nazi collaborator. A traitor in wartime. This is the real Van Meegeren. And it’s this Van Meegeren who re-cast himself during his arrest and trial – as a good sport who’d swindled Göring, as a plucky outsider who’d managed to humiliate a pompous elite.

Shortly before his death, Van Meegeren ranked second only to the prime minister in an opinion poll of popular Dutch figures. Once more, Van Meegeren had succeeded in getting people to see what he wanted them to see. He’d brought public opinion under *The Forger’s Spell*.

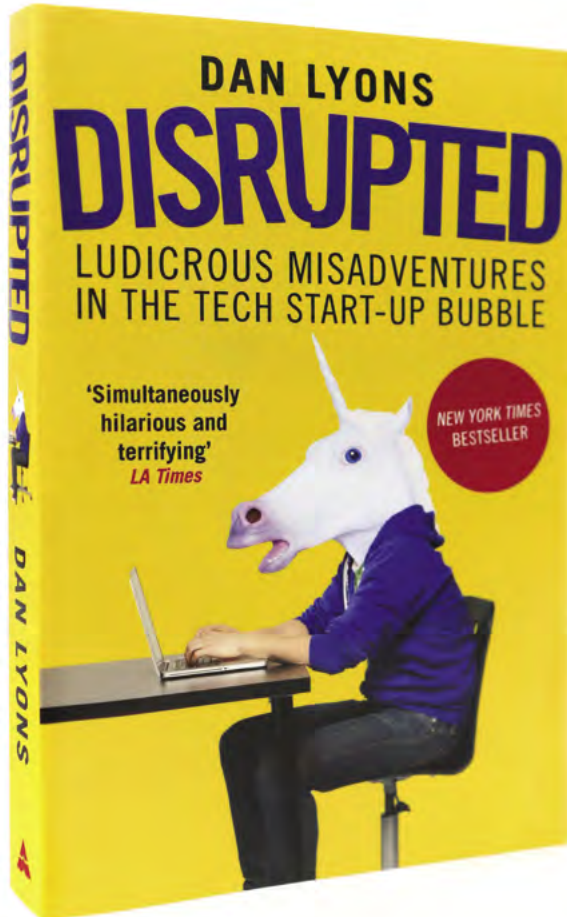
## CHRIS BACON

*Communications Director*

**DISRUPTED**

by Dan Lyons

ATLANTIC BOOKS 2016



## *Candy walls and the cult of a company*

**A WORKPLACE WITH UNLIMITED HOLIDAYS.** It sounds wonderful. Yet people tend to take less annual leave once given such freedoms. Less well known, a policy of unlimited holidays also makes firing staff cheaper: when an employee's contract is terminated, there is no accrued holiday the employer must pay for. This is one of the darker sides of technology start-ups that Dan Lyons brings out in *Disrupted*.

In 2012, enjoying a successful career, Lyons suddenly became a “beached white male” when he was dumped as technology editor of Newsweek. Unemployed in his early fifties, Lyons feared he would struggle to find good work again. And so he made the jump from writing about technology start-ups

to working for one. From Newsweek to Hubspot, a pre-IPO marketing software company. By December 2018 Hubspot's market capitalisation exceeded \$5 billion, despite the company having never made a profit.

With a technology background, Lyons assumed he would fit in comfortably with his new company's culture. The book catalogues his experience as a fish out of water.

With great warmth, poking fun both at himself and his new employer, Lyons describes scenes that feel like a family-friendly version of 1990s film *American Pie*. There's a candy wall. Beer on tap. Regular parties to celebrate the employees. Teddy bears attending meetings. In this young and sales-focused business, Lyons sticks out.

There is much to find amusing about Hubspot, and Lyons' tale of his time there. From re-branding spam as loveable marketing content, to Hubspeak, the company's own form of slang. At times, the company appears cult-like, something the founders don't seek to dispel. As Lyons details: "Believing that your company is not just about making money, that there is a meaning and a purpose to what you do... and that you want to be part of that mission – that is a big prerequisite for working at one of these places."

### **CAPITAL AND LABOUR**

*Disrupted* mixes satire with a critical look at the noxious side of much-vaunted start-ups. Tales of misadventure run alongside insight into capital benefiting at the expense of labour.

Hubspot runs at a loss, and is labour intensive. It relies on a young, cheap and disposable workforce, attracted by an environment of free beer and socials.

“ Lyons assumed he would fit in comfortably with his new company's culture. The book catalogues his experience as a fish out of water.”

## “Hubspot eventually IPOs in October 2014, despite losing \$118 million in five years.”

The offer of fun helps the company hire vast numbers of young sales people, who are put under intense psychological pressure, and paid a relatively low wage.

This is a darker side of Silicon Valley. At Hubspot, wealth is distributed unevenly. The benefits of growth accrue to investors and founders. Workers have little recourse or job security. People are “disposable widgets” in an environment of hype, an environment that needs to be sustained long enough for the founders and venture capitalists to reach a pay day. Throughout *Disrupted*, the acceptance is striking.

### TELLING STORIES

Having written about technology companies for more than 20 years, Lyons has an extensive network of industry contacts. Those he asks for advice agree on several things. The Hubspot product is substandard. The founders are mediocre at best. And yet Lyons should suffer through his misery – because the Hubspot founders are likely to pull off a successful IPO. As one of his contacts puts it, the founders “are good at telling stories and generating hype”.

Hubspot eventually IPOs in October 2014, despite losing \$118 million in five years, with marketing costs absorbing over 50% of revenue. Lyons has share options he can now exercise at a profit.

Yet after reading the Hubspot prospectus, Lyons “cannot believe anyone would actually buy shares in the company”. Losses are growing faster than revenues.

His experience highlights the risks to would-be investors in tech IPOs, and the risks in the investment climate that’s prevailed for much of the past five years. Companies are designed around generating huge revenue growth. Hype seems to matter more than actual profits. Some investors have made large paper gains. It all has the feel of the late 1990s.

Should confidence dip, or the cost of debt increase, the window for loss-making businesses may close abruptly, trapping many fingers.

**ALEX LENNARD**

*Investment Director*





*I was right. In the whole trilogy, nobody ever pees !*

# Last word

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**CLEMMIE VAUGHAN**

*Chief Executive*

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## THE FINANCIAL SERVICES INDUSTRY OFTEN SEEMS TO BE SELLING THE WRONG PRODUCT, to the wrong client, at the wrong time, for the

wrong fee.

The root of the problem isn't always bad people or bad incentives – it's in human nature. As humans, we all want comfort and certainty. That causes problems when it comes to investing. Because investing well will be uncomfortable.

Investing involves puzzling out the future from the facts of the present and the clues of the past. In financial markets where nobody knows what will happen tomorrow. How to deal with the discomfort this brings?

Some investment firms shrink the uncertainty. They project a confidence about the future. Through persuasive people and punchy presentations. Or friendly websites and investment technology that looks smart. In good times, this feels comfortable, as portfolios ride waves of momentum or run with the rest of the herd. It helps put the clients at ease – until, one day, a crisis hits.

Other firms shrink their responsibility. They say it's best just to accept – or perhaps try to beat – what the market serves up. This makes life easier for the investment manager. Investing becomes a one-dimensional challenge – simply choose a benchmark, then measure performance against it. But this leaves the client managing all the other dimensions – how best to allocate my assets? How do I judge opportunities and risks? How should I respond when I lose money?

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“This is the first edition. All being well, we’ll produce it annually.”  
*Jonathan Ruffer* PAGE 7

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