

The Ruffer Review 2023

“ UNDERSTANDING THE MARKET WAS LIKE DOING A 10,000 PIECE JIGSAW PUZZLE MADE ENTIRELY OF BLACK PIECES.”

Jon Dye

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Fifty shades of beige

Henry Jolliffe

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Happy clever people

Kevin Paul and Eleanor Moriarty

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American Pie

“‘Just right’ for the economy might still equate to cold porridge for corporate profits. And cold porridge won’t keep the bears away for long.”

Henry Maxey

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The disorder of the phoenix

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Whatever it breaks

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The Great Wealth Illusion

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Hemispheres of influence

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“ After the French
Revolution, there
was a notable lack of
monarchs’ heads.”

Annabel Paterson

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SPOT THE JAMES BOND FILM



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Foreword

JONATHAN RUFFER

Chairman

I READ THIS - THE FIFTH - RUFFER REVIEW IN A SINGLE SITTING.

I tackled the white-label version, with the authors' names removed, so that I could concentrate on the writing, not the writer. It came as a great encouragement to me since it reveals that we have what we've long coveted – an academy.

What do the articles have in common? They are all thoughtful. Where do they differ? They are like a covey of partridges, bursting over a hedge and breaking in every direction. There's a wildness of thought which comes from within, and bodes well for the future. I have always believed that great investors find unique ways of losing money on their journey to maturity – and there are certainly some delightfully rum thoughts in this Review. My favourite was the onset of fashionable baggy jeans foretelling another leg down in the market – Mary Quant meets quant investing.

I was particularly struck that the emphasis was so firmly on the lessons of the past. Annabel Paterson led the field running backwards (satrap of Lydia), followed by Alexander Chartres (Grigory Potemkin). Houdini, mentioned by Jasmine Yeo, came in a close third.

Our job is to keep portfolios running forwards – or jogging, at least. That requires stamina which, as marathon runners know, can only be built up with miles of history in our legs.





HEMISPHERES

AN EPIC BULL MARKET IN MAGICAL THINKING HAS DOMINATED THE WORLD IN RECENT YEARS, FATTENED BY THE FRUIT OF MAGIC MONEY TREES. Investors and policymakers have been gripped by delusions of control. However, as real world tectonic shifts drive us into a more inflation-prone and volatile era, Potemkin pretensions are crumbling. With modern empires struggling over spheres of influence, a host of new risks and opportunities have emerged. But it's your divided brain and its relationship to technology which may hold the key to navigating this era of historic change.

OF INFLUENCE



ALEXANDER CHARTRES

Investment Director

"REALITY IS THAT WHICH, WHEN YOU STOP BELIEVING IN IT, DOESN'T GO AWAY," quipped sci-fi writer Philip K Dick. Last year, reality finally caught up with magical thinking. Rolling shocks – from Russia's invasion of Ukraine to China's compound crisis and a historic energy hit – revealed a more inflation-prone and volatile world than most thought possible.

For policymakers and investors alike, events exposed a dangerous over-reliance on faulty models and abstract ideas divorced from reality. Delusions about the end of Great Power conflict and the stability of world order, for example. Or risks with the energy transition. Fantasies about Chinese technocratic competence, or central banks' imperium over inflation. Not to mention popular portfolio strategies predicated on permanently quiescent inflation. The list goes on.

Financial markets reeled, shedding over \$30 trillion in value.

As the shocks keep rolling, the bills for magical thinking are coming due. These ‘reality cheques’ bring with them immense investment challenges and opportunities. But they also raise a deeper question. Why, with more processing power and data at our fingertips than ever, was the world shocked by risks which were hiding in plain sight?

The answer points to one of the greatest structural risks and opportunities of all. Read on!

THE BIG REVEAL

Grigory Potemkin (1739–91) was a statesman who helped acquire new lands for the Russian Empire in what is now Ukraine, including annexing Crimea from the Ottomans in 1783. The eponymous Potemkin villages were allegedly built along the banks of Ukraine’s Dnieper to impress Catherine the Great en route to Crimea in 1787. Hastily erected to give the illusion of wealth, the villages were then dismantled and moved down river to repeat the process.

Appropriately, the story itself may be a fiction. Regardless, Potemkin has come to mean anything illusory and hollow, masking a more sobering reality.

Fittingly, Russia’s latest invasion of Ukraine has revealed many contemporary Potemkin façades.

ZEITENWENDE

German Chancellor Olaf Scholz called the invasion a *Zeitenwende*: an epochal tectonic shift.¹

In truth, Europe’s largest war since 1945 is simply one indicator of a much larger *Zeitenwende* long underway: a shift away from the low inflation, low interest rate,



low volatility, geopolitically stable era of recent decades towards a more inflation-prone and volatile world riven by long-term tectonic shifts. These include the continuing breakdown in world order, dominated by a Sino-US Cold War; the energy transition to Net Zero; mass ageing; the return of fiscally activist big governments; politicised central banks; increasing natural risk; and technological revolution.

But it was the return of World War II-scale battles to Europe which shattered lingering illusions that the post-Cold War era marked a decisive break with History. It has exposed Europe’s Potemkin armed forces, munitions stocks and defence-industrial bases.

Skinny supply chains and minimalist inventories aren’t fit for war: resilience requires the ability to take losses and keep fighting. To date, Russia is estimated to



have lost up to 300 aircraft and thousands of armoured vehicles, to say nothing of 100,000 soldiers.² Quantity can have a quality of its own: when the chips are down, inventory and industrial capacity count.

Ukraine is simultaneously the last war of the twentieth century, featuring artillery duels and trench warfare, and the first major war of the twenty first: drones, networked warfare and portable precision-guided missile systems are coming of age.

It also shows how America's way of war is adapting. Exhausted by failures in Afghanistan and Iraq and wary of escalation with a nuclear superpower, Washington is using its defence-industrial base and unmatched surveillance and targeting capabilities to help others fight strategic conflicts. The US is only likely to commit its own forces directly as a last resort.

This is staggeringly cost-effective. For a modest percentage of the Pentagon's annual budget, America has been able to destroy by proxy a significant portion of Russia's conventional warfighting equipment in Ukraine.³

The lesson for other at-risk states is simple: invest in your own defence, or American support is not assured.

So, after decades of neglect, defence spending needs to rise. Germany has belatedly committed to NATO's 2% of GDP defence spending target, plus a cool €100 billion catch-up cheque. Japan – eyeing China – announced its own defence budget hike from around 1% of GDP to 2%, whilst acquiring offensive Tomahawk cruise missiles. For a constitutionally pacifist state, this is a big deal.

FUEL ON THE FIRE

But higher defence spending is merely the appetiser on the bill for this new era. Russia's cessation of gas flows to Europe catalysed the biggest global energy shock since the 1970s. Scholz's government alone allocated more than €440 billion for energy support – about 12% of GDP.⁴ German inflation reached 11%, exceeding the 1974 peak of 8%.⁵

This highlights the mortal peril of relying on a potential adversary for your economic lifeblood, especially energy. Rapid supply diversification is now underway.

For some time, energy market dislocations have been a matter of when not if, courtesy of long-term underinvestment in supply. That was partly driven by naïve Net Zero plans – you can't wish away the fact that the world is still over 80% dependent on fossil fuels and demand is growing.⁶ Supply shortages mean the shocks will keep coming. Investment needs to climb.

2 Wallace (20 Dec 2022), Statement to UK Parliament and Oryx (Feb 2022), oryxspioenkop.com

3 Oryx (Feb 2022), oryxspioenkop.com

4 Reuters

5 Destatis, Bundesbank, Refinitiv

6 BP Statistical Review of World Energy, 2022

Germany – having bet the farm on globalisation, with its energy outsourced to Russia, defence to America and economic growth to China – found its collision with reality especially harsh.

Nothing embodies the revenge of reality over magical thinking better than Germany's energy policy: to compensate for lost Russian gas and the self-inflicted shutdown of its zero-emission nuclear power industry, Berlin had to reactivate coal-fired power stations.

As realism belatedly creeps into the Net Zero conversation, other governments – including Japan, America, Sweden and France – are looking afresh at nuclear power. An atomic renaissance is coming.

XI'S THE ONE

In China, Xi Jinping secured his third term as paramount leader. A near clean sweep of allies at 2022's quinquennial Chinese Communist Party (CCP) Congress seemingly confirmed the reassertion of the party state in all areas of China's economy.

But covid didn't get the memo, and Xi was forced into a humbling U-turn over his flagship suppression policy. Zero covid was an extreme case of trying, and failing, to defy reality – you can't hold off a highly contagious virus forever. The bills became unbearable: 20% youth unemployment;⁷ crumbling economic growth and local government finances; the most widespread protests since 1989. For China's economy, zero covid was a near-death experience.

A re-opening boom now beckons. How this impacts global inflation and central bank policies is one of the great questions for the year ahead, as is who profits from it.



“ Many firms found their Russian assets written down to zero overnight after the invasion. How can boards be confident they won't face similar risk in China?”

But Beijing's policy pivot goes far beyond covid – a reminder that, when it comes to China, it pays to expect the unexpected. Xi's G20 appearance in Bali and New Year address, a partial deal over US-listed Chinese stock audits, greater support for the private sector – including regulatory relief for tech platforms – and a diplomatic reset with Australia all suggest a concerted attempt to buy breathing space: to address internal crises; lure back foreign capital; and torpedo American attempts at containment.

It's working – for now. Fresh from the humiliation of Germany's failed *Ostpolitik*, Chancellor Scholz rushed to Beijing to double down on China, whose markets are far more important to Europe than to America. Other European leaders are likely to follow suit. This is risky. Many firms found their Russian assets written down to zero overnight after the invasion. How can boards be confident they won't face similar risk in China?

The mood music is sweeter for now, but a re-opening sugar rush won't resolve the Middle Kingdom's cluster-crises, from debt,

housing and demography to water scarcity and the new Cold War. Nor will it change the reality that all returns in China are ultimately in the gift of the CCP.

Given China's reliance on imported fuel, food and tech, sanctions on Russia are fresh encouragement for Beijing to create a fortress economy and a sphere of influence.

So investors face a dilemma. Policy pivots signal an encouraging setback for magical thinking in Beijing and the potential for a significant rally in China-related assets. But the long-term geopolitical bear market remains. New US restrictions on investment into, and from, China are coming. And, with China and India once again sparring in the Himalayas whilst US and Chinese aircraft play chicken over the South China Sea, a major crisis for markets is feet away.

That matters for business. Apple, a globalisation posterchild ('designed by Apple in California, assembled in China'), has announced plans to move some China-based production to India and Vietnam. More unstable world order and more politicised policymaking in China are turning the theory of supply chain diversification into fact. Good for resilience. Bad for margins, efficiency and valuations.

NAKED EMPERORS

Ukraine War fallout fanned the flames of accelerating inflation caused by predictably disastrous, but widely popular, covid policies – draconian lockdowns and wildly excessive stimulus.

The result: the highest inflation for at least 40 years across advanced economies, not to mention sky-rocketing debts and catastrophic long-term damage to health, education and society. The bills for extremely narrow policy focus will last generations.

For central banks which had repeatedly assured us inflation was transitory, this was a humiliation. Their models, optimised for the outgoing era of relative calm and deflationary tailwinds, could not account for negative supply shocks or a real time experiment with Modern Monetary Theory. Both will be staples of the new era.

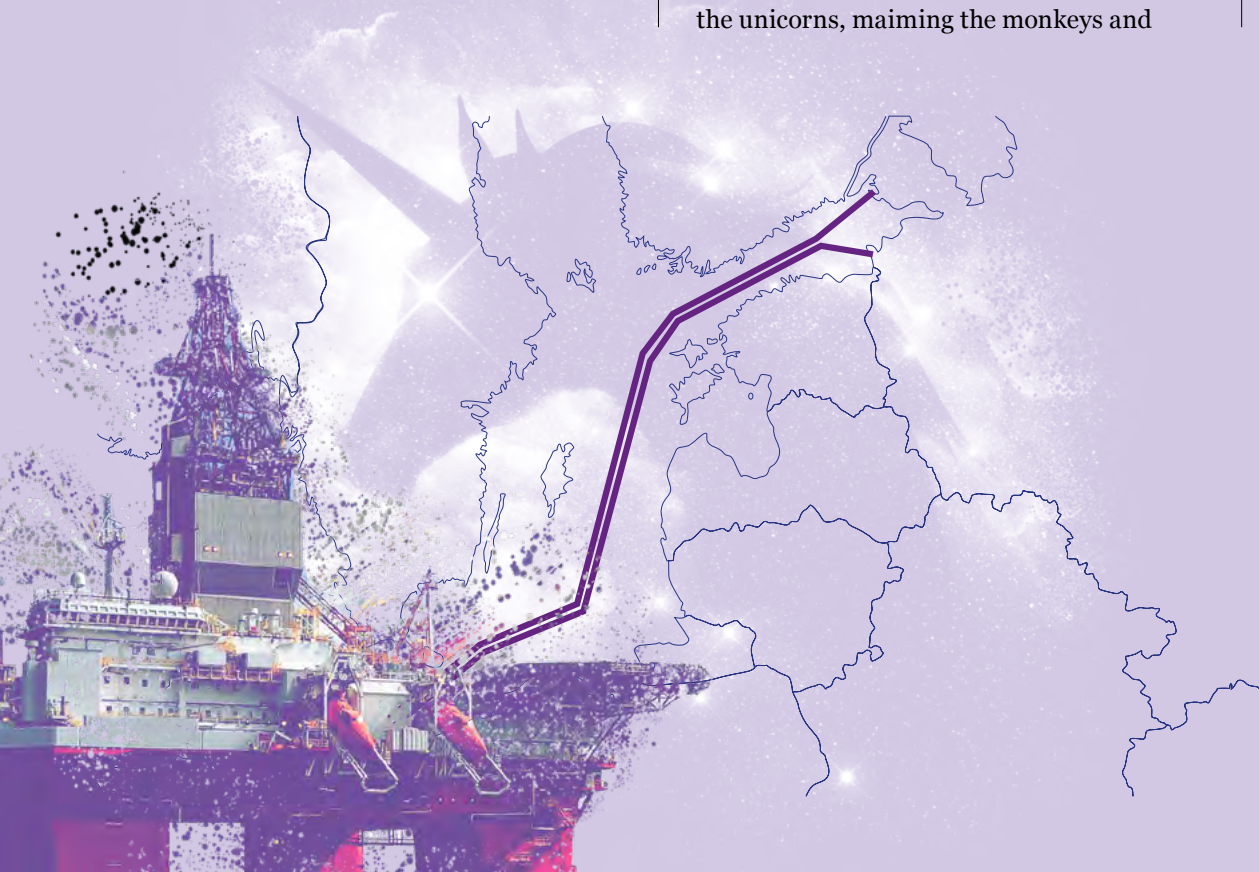
Operation Stable Door – central bankers’ belated attempt to put the inflationary horse back in its loose box – may or may not succeed in the short term. But it’s irrelevant because, in the long run, central banks do not control the level of inflation. Covid and Ukraine are the one-two combo which revealed their Potemkin pretensions.

GORED UNICORNS, MAIMED MONKEYS

This was bad news for market darlings and for many popular portfolio strategies based on the belief inflation was dead. Magical thinking drives asset bubbles, and we have been in the record-breaking ‘everything bubble’. Low rates, inflation and volatility increase the present value of distant returns.

Unsurprisingly, 5,000-year lows in rates created a frenzy. Trillions of dollars of bonds offered negative yields, guaranteeing losses for investors in these ‘safe’ assets. Fast-growing profitless tech unicorn multiples charged higher, fed by sackfuls of nearly free cash. Non-fungible token digital images of Bored Apes were changing hands for millions of dollars. Dozens of new cryptocurrencies launched daily.

But sharply higher inflation, rates and volatility marked reality’s revenge, goring the unicorns, maiming the monkeys and



“When it comes to paying the bills, there’s a problem: the issue for politicians is never finding projects to spend money on; it’s finding money to spend on projects.”

sending almost all asset markets south. The 60:40 and risk parity strategies had their worst year for over half a century. Diversification using only conventional assets floundered as investors discovered it was all one big liquidity-fuelled trade.

Crypto assets and the UK pension industry’s leveraged liability-driven investment (LDI) strategies were two prominent victims of evaporating liquidity. As the monetary tide retreats further, more investment bubbles will burst. Many private market valuations remain magical. If you pay magical prices, don’t expect a fairy-tale ending.

NO MONEY MO PROBLEMS

When it comes to paying the bills, there’s a problem: the issue for politicians is never finding projects to spend money on; it’s finding money to spend on projects.

In his posthumous hit ‘Mo Money Mo Problems’, The Notorious B.I.G. lamented that extra cash couldn’t solve his difficulties.

The central fact of the new era is this: money is no longer free. Governments thus have an even bigger issue: no (spare) money, even mo problems.

By peacetime standards, advanced economies were already historically indebted. Covid added to the tab. And herding in the corner of the room are the elephants. Mass ageing brings dramatically higher spending on pensions, health and social care, alongside relatively scarcer labour and capital. Climate change requires colossal expenditure on adaptation – cast your mind back to the melted runways and buckled railway tracks as Europe frazzled in 40°C heat last year. And debt service ratios in many countries are already at or near all-time highs, despite rates plumbing multi-millennia lows.

Central banks and, more importantly, fiat currencies are precariously placed.

Remember that central banks were created not to control inflation but to manage government debt – the Bank of England was founded in 1694 to help fund upgrades to the navy after a drubbing by the French – and this remains their essential function.

And they are not politically insensitive. As structural inflation pressures become more obvious and economic pain grows, the pressure to tolerate higher levels of inflation will, too.

The eurozone, a child of the deflationary era, is especially vulnerable, with its many fault lines: keeping the bloc together and fighting inflation may be mutually exclusive.

The chorus of ‘3% is the new 2%’ for central bank inflation targets is already finding its voice – the International Monetary Fund is flying kites.⁸ This is a tacit admission that long-term price levels are set not by central banks but by structural forces, and that financial repression – keeping inflation above the rate of interest in order to erode outstanding debts – is increasingly likely. Financial repression will be required

not only to prevent property markets collapsing and pay off the elephants, but also to incentivise the major investments in supply required in this new era of shortages.

In short, fiat currencies will pay the price for our addiction to debt.

THE SECOND SCRAMBLE

Xi's coronation was another reminder that we still live in an age of empires: while China, Russia, the EU, Japan, India and Turkey all inherit older imperial mantles, the US is today's hegemon.

But, as America's imperium wanes, so does its ability to secure the open and stable world order it built.

Last year underscored what can happen to countries which lack their own resources (especially energy) when markets freeze: plunging currencies, weak growth, strategic vulnerability, political crisis. Today's Great Powers are therefore engaged in a new Great Game: a scramble for spheres of influence encompassing reliable resources and friends.

The holy grail is the ability to buy commodities in your own currency, a privilege presently reserved for Uncle Sam. But that's changing.

Xi's recent visit to Saudi Arabia for the China-Arab States Summit included commitments to expanded use of the yuan for oil payment. If China, the world's largest oil importer, can pay for its oil and gas in yuan, which are recycled to buy weapons and tech from China, it will shift the pattern of global liquidity flows – with implications for the value of assets and market liquidity. Meanwhile, Russia's botched invasion has confirmed its status as junior partner to Beijing and compelled it to sell discounted commodities to China, India and others.

“Most countries don't want to take sides in a new Cold War, and many prefer China's ‘no questions asked’ offer.”

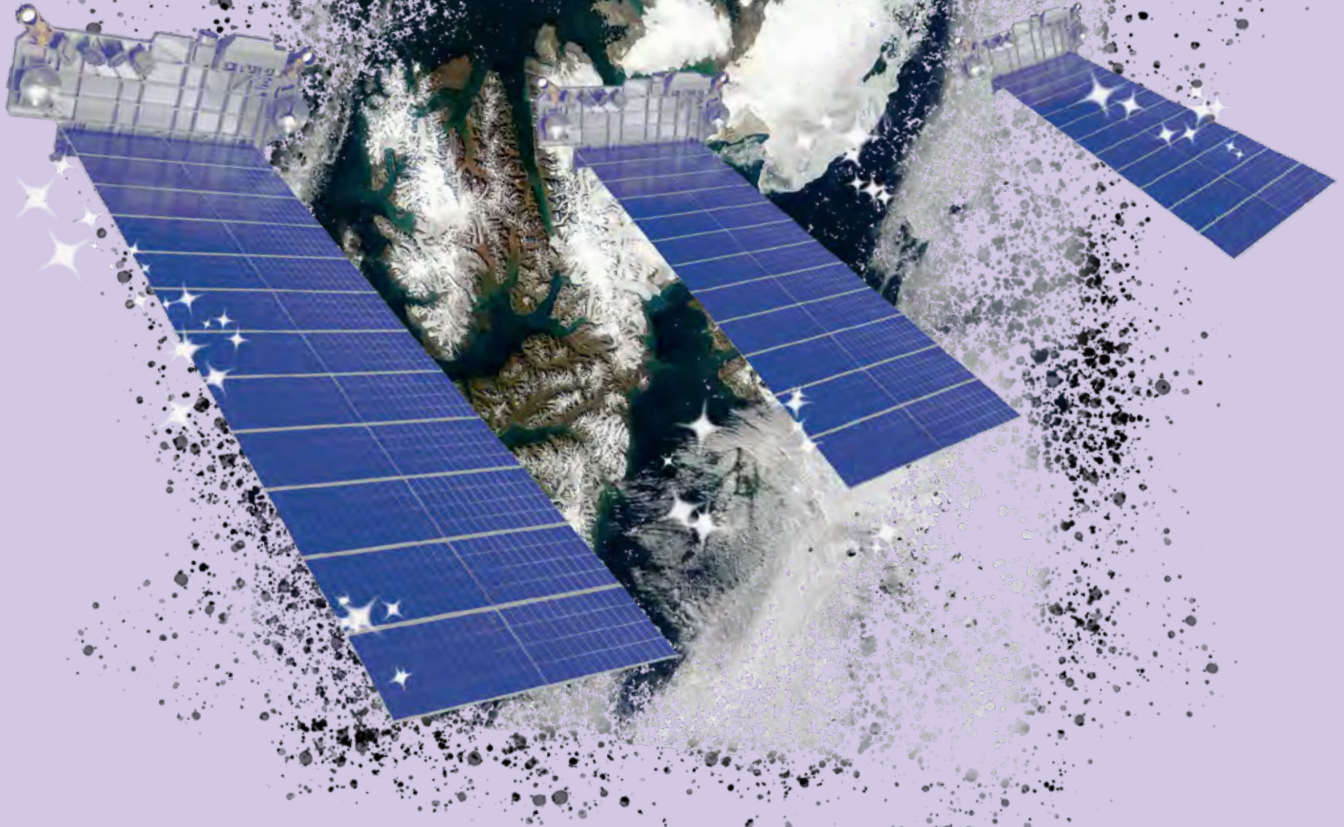
China's Belt and Road Initiative is a physical attempt to cement a secure trading sphere. Beijing continues to establish an alternative global payments infrastructure and China-centred institutions, such as the Asian Infrastructure Investment Bank and the Shanghai Cooperation Organisation. Rapid rollout of the digital yuan could bind them all together.

America's full-scale weaponisation of the dollar and technology since Russia's invasion has reinforced China's desire to establish an independent hemisphere of influence. Follow the money: increasing exports of technology and weapons to the Middle East are a further sign of things to come.

Chastened, the US and its G7 allies launched the Partnership for Global Infrastructure and Investment, which aims to provide up to \$600 billion over five years for developing world infrastructure.⁹

But the West is late to the party. Most countries don't want to take sides in a new Cold War, and many prefer China's ‘no questions asked’ offer.

Latin America, Africa, Central Asia, South-East Asia, the Arctic, outer space – all the great ‘in-between’ regions are



battlegrounds in this scramble for resources, markets and friends. And Europe is only lukewarm on the new Cold War.

The ocean depths are increasingly contested as advances in robotic technology open up deposits of submarine minerals. Above them, remote Indo-Pacific island nations astride important trade routes or military chokeholds are the subject of fresh struggles between China, the US, Australia and others. In the Arctic, major powers are jostling for control of hydrocarbons, metals and rare earths as melting ice improves access.

The gloves are already off. As economist Pippa Malmgren has noted, in January 2022 an undersea internet cable connecting the archipelago of Svalbard – home to a vital satellite receiving station – with the Norwegian mainland was severed. Several

kilometres of cable were removed. In a Bond-worthy plot, an oligarch's yacht was apparently parked over the relevant cable to disguise Russian submarine activity.¹⁰

Over 95% of global data is carried on undersea cables¹¹ and, whilst attention has been focused on risks to gas pipelines after the Nord Stream bombings, Svalbard's experience offers another warning: our digital jugulars are vulnerable.

And that Svalbard base station is busier than ever. Ukraine's experience – from the role of US satellite precision targeting capabilities to Starlink internet access – underscores the importance of holding the highest ground. Or, at least, denying it to others.

But the commodity most vital to dominance of global economic, political and military order is also the most complex to acquire.

¹⁰ Malmgren (25 Nov 2022), MoneyWeek summit

¹¹ CSIS

THE STRUGGLE FOR MASTERY

Semiconductors – aka computer chips – are the foundation of the digital economy, essential for everything from smartphones and the cloud to precision-guided weapons, artificial intelligence and autonomous systems. Chips underwrite revolutionary promise and peril: improved clean technologies and personalised medicine; but also autonomous weapons able to target individual people using biometric precision. A Turkish-made Kargu-2 drone reportedly became the first to hunt down individuals in North Africa,¹² while adaptive armed drone swarms have moved from science fiction to science fact.¹³

No chips means no seat at the table. But their supply is extremely complex, costly and concentrated, as Chris Miller’s *Chip War* makes plain.

At the cutting edge, chips are fingertip cities with over 200 layers printed onto silicon wafers using extreme ultraviolet (EUV) light.¹⁴ The plasma required to create EUV light has to be around 220,000°C – almost 40 times hotter than the surface of the sun.¹⁵ Just the laser used requires 457,329 parts.¹⁶ Tools and production processes are fine-tuned to the level of the atom.

The semiconductor industry is a posterchild of hyper-specialised and efficient global supply chains. But both design and production are dominated by the US and its allies. Notably, Taiwan – which China considers a rogue province – produces 37% of all processing chips.¹⁷ TSMC, its flagship chipmaker, fabricates almost all of the world’s most advanced chips.¹⁸

As the new Cold War hots up, this is a huge risk for the global economy. Any Chinese blockade of Taiwan would make Ukraine-related disruption look decidedly nano. And China did a test run during then

US House Speaker Nancy Pelosi’s visit in August 2022.¹⁹

ALL IN

So, with covid disruption, politics and wars both hot and cold focusing minds, the Biden administration has gone all in on the struggle for mastery over chips and next generation industry.

On 7 October 2022, the US Commerce Department dramatically escalated its tech war with China, unveiling fresh restrictions designed to “restrict [China’s] ability to obtain advanced computing chips, develop and maintain supercomputers, and manufacture advanced semiconductors.” Measures included restrictions not just on technology transfer, but also on US persons working with China’s chip industry.

Biden has put flesh on Trumpian bones. Japan, South Korea and the Netherlands are all US allies and essential nodes in the semiconductor ecosystem. America – which underwrites security for all – expects them to fall into line.

But the White House’s new appetite for directing industry towards strategic objectives goes far beyond regulatory sticks. Congress has also passed several landmark bills to transform the American economy and secure technological supremacy with gargantuan carrots.

The Inflation Reduction Act provides \$369 billion to dominate twenty-first century clean tech, supporting everything from solar, hydro and nuclear power to electric vehicles, strengthened electricity grids, carbon capture and green agriculture.

Meanwhile, the \$280 billion CHIPS and Science Act provided a huge boost to scientific research budgets, plus \$52 billion in subsidies for semiconductor



12 UN Panel of Experts on Libya | 13 Hambling (24 Oct 2022), Forbes | 14 Heyman (24 Aug 2022), Semiconductor Engineering

15 Li (13 Dec 2022), Financial Times, The global microchip race: Europe’s bid to catch up | 16 Miller (2022), Chip War

17 Ibid | 18 Ibid | 19 CSIS



“ Globalisation is almost dead and free trade is almost dead. A lot of people wish they would come back, but I don’t think they will.”

MORRIS CHANG

20 White House briefing (9 Aug 2022)

21 TSMC (6 Dec 2022)

research and manufacturing in the US – subsidies not available to any firm providing semiconductors under 28 nanometers to either China or Russia for a decade hence.²⁰ When combined with a \$1.2 trillion infrastructure blitz, that’s nearly \$2 trillion of fiscal activism in the next decade from just 12 months of legislation. This is a step-change in US government involvement in the economy, designed to encourage private sector investment.

It’s already bearing fruit. “American manufacturing is back,” declared President Biden at TSMC’s new \$12 billion Arizona chip manufacturing facility in late 2022. TSMC promptly tripled its investment to \$40 billion.²¹ “And so is industrial policy,” he should have added.

Assessing the new era, TSMC founder Morris Chang said: “Globalisation is almost dead and free trade is almost dead. A lot of people wish they would come back, but I don’t think they will.” Yet the impact of America’s re-industrialisation effort and re-engineering of supply chains still seems under-priced by the market. Flows of money shape the investment landscape and the US government has just signalled it’s back in the business of terraforming.

America’s economic rivals – including China, Japan and the EU – have long been in this business and are doubling down. Everywhere you look, politics trumps profit.

THE MACHINE

Great Powers want to dominate advanced tech so that they can dominate each other. But what if technology increasingly controls us, and our ability to perceive reality?

We live in the Machine: the technological-industrial system which enmeshes us and upon which we depend.²² Think electricity, the internet etc. But it's more than that – something better understood in its digital incarnation by the laws of biological evolution, secreting itself into all corners of existence, hoovering up data, demanding ever more processing and memory capacity, codifying everything into packets of digestible information of bits and bytes. This is not a neutral system.

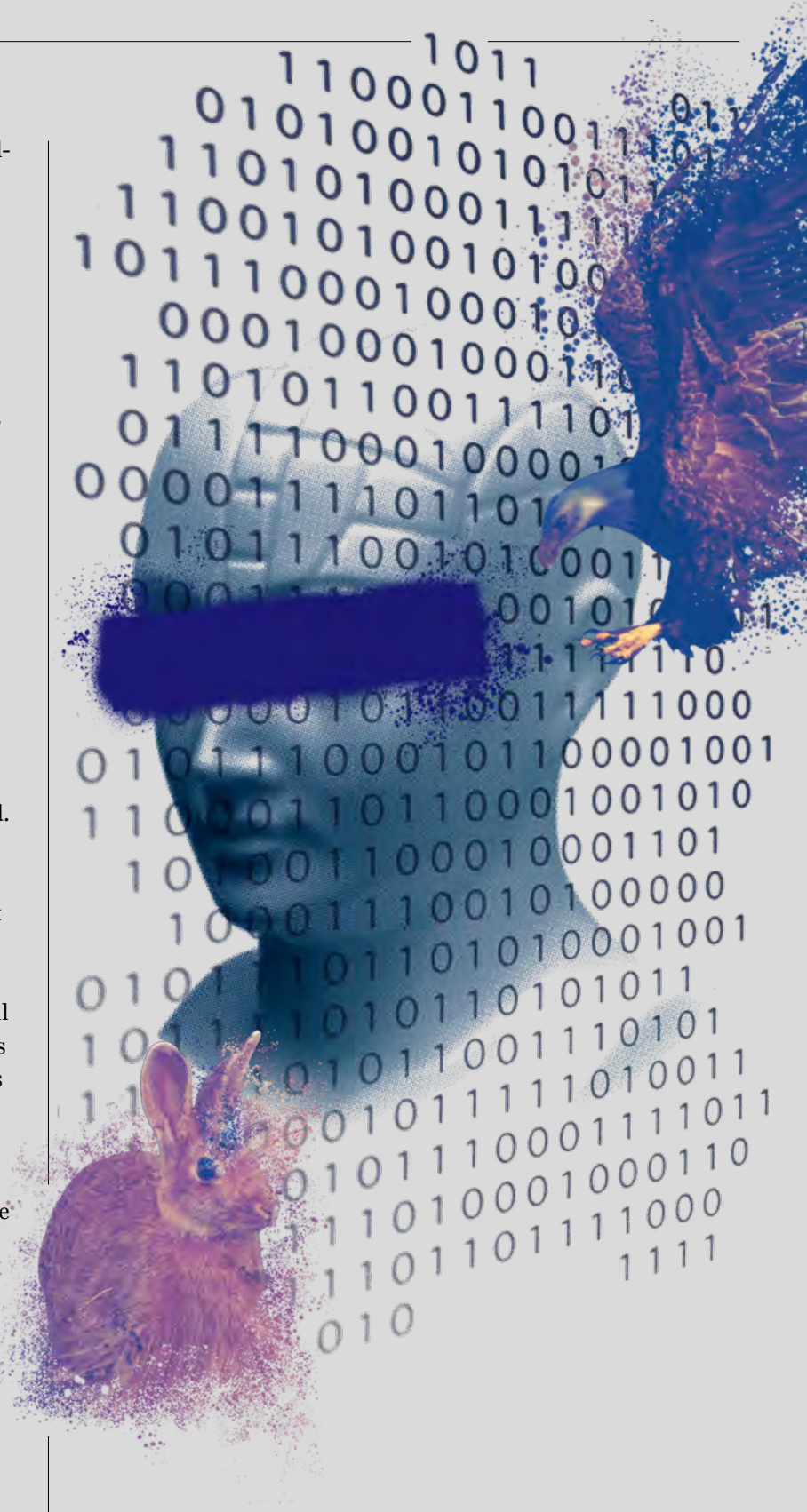
Consider personal technology. It is designed to be addictive, to prevent you looking away. It's called the attention economy for a reason.

As Canadian communications guru Marshall McLuhan observed, “a medium is not something neutral – it does something to people.”

Next time you are on a train, look around. See how many people are on their phones or laptops. *Pace* Zuckerberg, we're already in a hybrid reality, consuming infotainment relentlessly optimised to our personal preferences by a Machine that often knows us better than we know ourselves. We are all creating and consuming alternative realities reflexively engineered by and for us. China's TikTok is cyberspace's answer to crystal meth, not to mention a data-harvesting and manipulation engine extraordinaire for the platform's biggest influencer: the CCP. In the US, that means it's on borrowed time.

The epochal impact of smartphones and social media on our attention spans, ability to concentrate, mental health and political discourse are now widely documented if still underappreciated.

But it's not just about information silos. For example, engines transform our relationship with distance, reordering



“All animals need to do two things: eat; and avoid being eaten.”

society around them as artificial light does with darkness. ChatGPT, the artificial intelligence engine launched in 2022, is already reshaping the world around it, from school homework to the ‘knowledge economy’.

The Machine is an unstoppable flywheel, driving Modernity’s state of perpetual revolution: the more the Machine grows and disrupts, the more we depend on it. The Machine has given us access to more instrumental power, information, memory and processing capacity than ever before.

And yet, despite unprecedented technical capacity to identify and join dots, we’ve just experienced a succession of huge shocks, with many people surprised not just at their occurrence but also at their interconnection. Sophisticated models – used by central bankers, investors and more – have been blindsided by reality’s revenge.

BLINDED BY DATA

But perhaps the world is blind not despite the tsunami of data and sophisticated models but partly because of them. The Machine offers power, but also false comfort and illusory certainty in an inherently uncertain world. Look no further than financial models of the way the world is supposed to work. During the credit crunch, Goldman Sachs CFO David Viniar tried

to explain the implosion of flagship hedge funds with the claim that “we were seeing things that were 25-standard deviation moves, several days in a row.” A single 25-standard deviation move should have happened less than once since the dawn of the known universe.²³ Outlandish by any measure. But several days in a row? Truly magical. Viniar’s comment epitomised the naïve over-reliance on models which turned out to be junk. As the old saying goes: “In theory, theory and practice are the same. In practice, they are not.” Investors need to remember that, in theory, the models and reality are the same. In reality, they are not.

Deluging data, abstract models inspiring undue confidence, technology which deliberately narrows our attention – all make it harder to keep focused on the big picture, the future and to manage uncertainty.

But the influences of machine brains are most potent in their interaction with their human equivalents.

HEMISPHERES OF INFLUENCE

Human brains are split into two hemispheres that are asymmetric in all dimensions. This lateral asymmetry exists widely in the animal kingdom. It also runs deep into our evolutionary past: the earliest known example is *nematostella vectensis*, a sea anemone living over 700 million years ago.²⁴

Why? It’s complex and not fully understood. But all animals need to do two things: eat; and avoid being eaten. These two activities require radically different approaches to the world.

In *The Master and His Emissary*, neuropsychiatrist Iain McGilchrist explored how “the left hemisphere [LH] yields narrow, focused attention, mainly for the purpose of getting and feeding. The right

22 For more on the Machine, see the work of Jacques Ellul, Paul Kingsnorth and Kevin Kelly
23 Dowd, Cotter, Humphrey and Woods (2008), How unlucky is 25-sigma?
24 McGilchrist (2021), The Matter with Things

hemisphere [RH] yields a broad, vigilant attention, the purpose of which appears to be awareness of signals from the surroundings, especially of other creatures, who are potential predators or potential mates, foes or friends.”²⁵

A deeper exploration of the hemispherical differences is worthwhile, given their relevance for investors. In *The Matter with Things*, McGilchrist continues: “The LH deals preferentially with detail. The local, what is central and in the foreground, and easily grasped; the RH with the whole picture, including the periphery of background, and all that is not immediately graspable... The RH is on the lookout for, better at detecting and dealing with, whatever is new; the LH with whatever is familiar... The LH aims to narrow things down to certainty, while the RH opens them up to possibility... The LH tends to see things as isolated, discrete, fragmentary, where the RH tends to see the whole.”

McGilchrist’s thesis is that, whilst both hemispheres and ways of approaching the world are vital, the left hemisphere with its narrow focus and fragmented, mechanistic understanding of reality – the Emissary – is naturally subservient to the integrated big picture understanding of the right hemisphere – the Master.

However, he believes that, in recent centuries and increasingly since World War II, the left hemisphere’s way of understanding the world has increasingly predominated, especially in the West.

This is partly because humanity has been seduced by the left hemisphere’s power to manipulate the world around us; partly because of the simplicity and neatness of the answers it offers, even if they’re wrong; and partly because of its reflexive relationship



with the Machine and its need to deal with mechanistic models of reality.²⁶

You don’t have to subscribe to McGilchrist’s wider historical thesis to see how an inflexible privileging of theory and models over reality can have disastrous consequences: the central bank models of inflation which failed; the financial models which said that certain events could only happen once every few million years – but actually occur every few years; political ideologies that demand reality conform to abstract dogmas; myopic focus on narrow issues with total failure to consider wider fallout (covid-related lockdowns with their inevitable long tail); the idea that modernity marks a radical break with the past and we are somehow free of human nature and the tides of history. The list goes on.

²⁵ McGilchrist (2019 edition), *The Master and His Emissary*

²⁶ *Ibid*

²⁷ Hat tip to Richard Chartres!

²⁸ Kissinger (17 Dec 22), *The Spectator*, How to avoid another world war

It is hard not to see the imprimatur of the left hemisphere in this, the upstart Emissary usurping the reflective Master. The left hemisphere's traits have been instrumental in building the Machine, granting us an increasing ability to manipulate the world. This has brought phenomenal positive advances, from medicine to nutrition, travel and communication.

But the Machine also reinforces the left hemisphere's bias towards a simplistic, mechanistic view of reality, a predisposition to the known, certainty and control. And an unwillingness to recalibrate in the face of new evidence – or even outright denial that such evidence exists.

These habits have been hyper-charged by the atypical economic stability of the last few decades, which fed technocratic illusions of control and a belief that all we need is more data and more control and everything will be all right.

Which makes the shock of the real even greater.

“As machine intelligence saturates the world around us, the way the world behaves will change, unpredictably.”

OUT OF CONTROL

As Russia retreated from Kherson in late 2022, it took with it the bones of that city's founder, Grigory Potemkin, unintentionally symbolising the retreat of magical thinking.²⁷ After a year which humbled pretensions in all dimensions, the near-term outlook remains highly uncertain, but longer-term contours seem clearer.

The Great Moderation is over. Disinflationary forces are not dead – it's inflation volatility for a reason – but they are in a staggered retreat. We have crossed the Rubicon into a new, more inflation-prone and volatile era courtesy of generational shifts in world order, demography, fiscal and monetary policy, central banking and environmental risk. But the *Zeitenwende* is especially risky because of the paradoxical influence of the Machine.

Recalling the way the Great Powers failed to understand how technology had raised the stakes before World War I, Henry Kissinger recently urged world leaders to “reflect on the impact on [the Ukraine War] and on long-term strategy of incipient high-technology and artificial intelligence.” Once computers become the principal executors of strategy, he continued, “the world will find itself in a condition for which as yet it has no established concept. How can leaders exercise control when computers prescribe strategic instructions on a scale and in a manner that inherently limits and threatens human input? How can civilisation be preserved amid such a maelstrom of conflicting information, perceptions and destructive capabilities?”²⁸

Kissinger's challenge is not just a reminder that Ukraine War fallout could spring further surprises, or that technological change means future conflicts

risk escalating in unexpected ways.

It's a reminder that, as machine intelligence saturates everything around us, the way the world behaves will change, unpredictably. So the Machine and its artificial intelligence black boxes enhance our illusion of control whilst simultaneously injecting greater risk and uncertainty into an inherently unpredictable world. The model-busting moves will keep coming. And, with its addiction to models and theories married to a lack of historical literacy, finance is especially exposed.

IT'S WHAT YOU KNOW YOU DON'T KNOW THAT COUNTS

The *Zeitenwende* brings huge opportunities. Sectors with shortages, including energy and commodities, offer high cash flows and capital expenditure opportunities. Defence is also a growth industry – though mix is important, with drones, long-range precision munitions and targeting systems, space and deeper inventories all big winners. Climate pressures and sluggish productivity both demand an infrastructure push. As financial repression deepens, capital will flow to countries offering positive real returns. Gold's long-term lustre looks even brighter as inflation, geopolitics and the weaponised dollar focus minds: emerging market central banks are already voting with their feet. Valuable niches in semiconductor supply chains offer ways to play the exponential growth of the Machine.

At both country and company level, shifting critical goods and commodity supply chains will produce winners: small caps could be a place to start. Services globalisation will continue apace. Companies favoured by activist governments' fiscal firehoses and credit guarantees – often in pursuit of



resilience – will gain a competitive advantage.

Yet more important than any particular idea is an appreciation of the range of possibilities a volatile era presents. One of the right hemisphere's defining features is an appreciation of what it does not know.

Obviously, we can't know what we don't know. But we can make a start by preparing our playbooks for 'known unknowns' in the new era, many of them whens, not ifs. Where will inflation pressure and rising rates trigger crises next? Private markets? The eurozone? Perhaps Japan's government bond market? Who wins from political change in Russia, China or Iran? Or from an extended tactical rally in a long-term geopolitical bear market? What happens in a new Taiwan crisis? In exchange for drones and ammunition, Russia is reportedly boosting Iran's nuclear weapons programme, so is this the year Israel and the Gulf States decide to intervene? And what does that mean for oil? What if the yuan is suddenly accepted more widely for commodities? Or plunges to address debt deflation in China?



“The core business of active investment management is simple. Identify the gaps between reality and the markets’ perception of it. Then exploit the difference.”

Could the CCP’s control of the economy echo its ‘control’ of covid? Or will Beijing’s tactical retreat from magical thinking prove more enduring? What do you buy in the next liquidity seizure or deflationary lurch?

ASYMMETRY AND ALPHA

The core business of active investment management is simple. Identify the gaps between reality and the markets’ perception of it. Then exploit the difference.

Divergences caused by magical thinking provide the biggest risks – and the richest prizes.

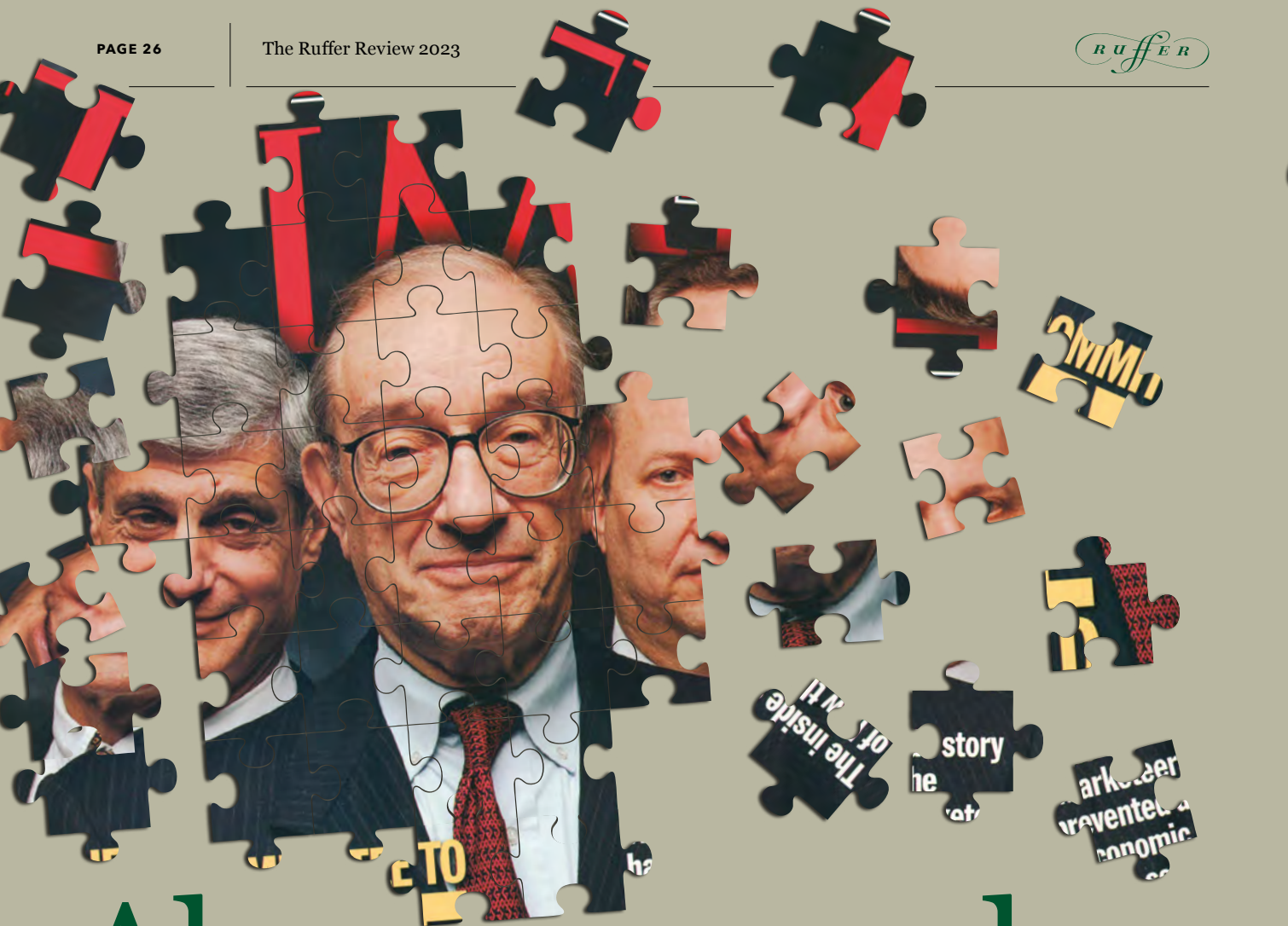
The new, more volatile era naturally offers more opportunities for such gaps to be exploited, aided by a greater chance of policy error by our emperors in their various states of undress.

But recent events illustrate an even bigger risk and opportunity: the chance to arbitrage a way of thinking which is over-reliant on abstract ideas and models, fails to see

connections between events or objects and has a narrow, inflexible focus. An approach compounded by the nature of the Machine and by financial industry incentives for short-term performance and investment herding.


In short, it is the chance to take on the Emissary and his ally the Machine in markets by emphasising the Master’s big picture vision, flexibility and focus on not being eaten. Live to fight another day by focusing on not being completely wrong, rather than trying to be completely right. This is the essence of our focus on capital preservation through absolute, rather than relative, objectives.

As apex predators return to markets, it’s never been more important. ●



Always a puzzle, never a game





TONY DYE WAS THE CHIEF INVESTMENT OFFICER OF PHILLIPS & DREW, one of the UK's largest pension fund managers in the 1990s. He was known to most people for his value-driven approach to investing and his bearish prognostications on the dot.com bubble. But I knew him as Dad.



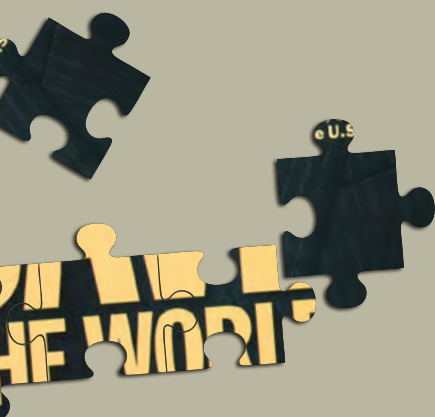
JON DYE

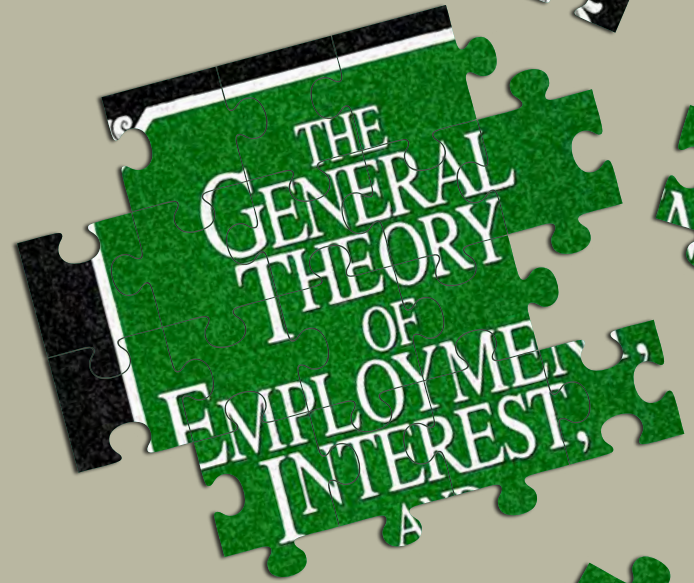
Research Director

ONE OF HIS DEFINING QUALITIES WAS INTELLECTUAL CURIOSITY.

By nature, nurture or both, it was a trait I inherited – making a career in investing a compelling vocation for me. I joined Newton Investment Management as a junior economist during the epic final blow out of the dot.com bubble. Prices of internet-focused growth stocks were soaring, with the technology-heavy Nasdaq doubling in the first six months of my career.

It was a remarkable time – and one I remember extremely well, not least because it was humiliating for Dad. He was forced out of the investment firm he had led – just before the start of a three year bear market which ultimately vindicated his views and portfolio positioning. (He stuck to the terms of his non-disclosure agreement, so the first I knew of this was when I read about it in *The Times*.)





During this period of market euphoria, Dad wasn't exercised by a yearning to be proved right or by bloody-minded contrarianism (though I suspect both had their appeal). His motivating grievance was with the way investment professionals were willing to act with other people's money.

His exasperation came from seeing money management transformed into a casino of relative performance chasing, with perverse incentives for the casino's players and operators. In his view, this was an affront to the true purpose of the professional investor – to compound people's pensions and savings over time. Dad regarded John Maynard Keynes' *General Theory of Employment, Interest and Money* as a foundational text in investing. One quote felt particularly apt at this time: "Worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally."

Behaviour throughout the investment industry in the run-up to the dot.com bust was frequently ridiculous, sometimes disgraceful and almost always detrimental to clients – a fact that was not lost on Dad, and one he had no qualms about pointing out.

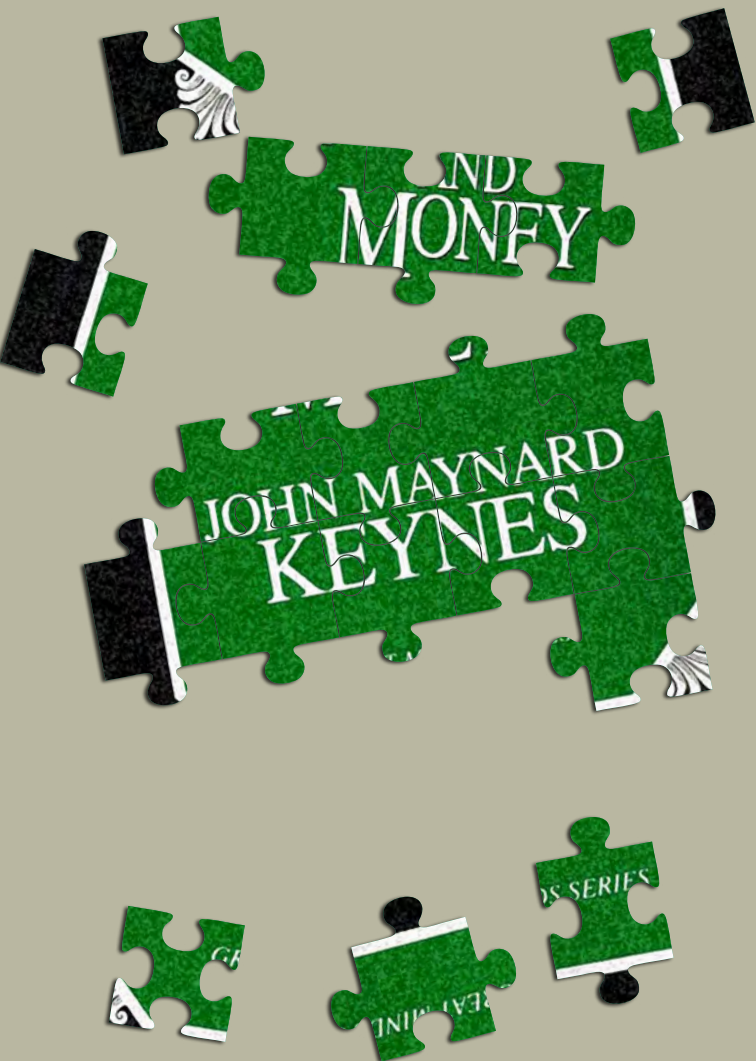
A MORAL HAZARD

The financial authorities did little to rein in this type of behaviour. Quite the reverse.

In 1998, the hedge fund Long-Term Capital Management collapsed in catastrophic fashion. The US Federal Reserve (Fed), fearful of contagion risk, rapidly cut interest rates, thereby restoring the equity bull market that ended in the dot.com bust. In doing so, the Fed instigated a moral hazard in markets – the assumption central banks would bail out the system at the first sign of trouble. This encouraged investors to take outsized, destabilising risk and set a precedent which would shape investor behaviour ever after.

Dad was deeply concerned by the portrayal of policymakers as omnipotent financial deities. The February 1999 cover of *Time* magazine captured the zeitgeist. The caption read 'The committee to save the world' below headshots of Fed Chairman Alan Greenspan and Robert Rubin and Larry Summers, Secretary and Deputy

“ Worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally.”



Secretary of the Treasury respectively. When he returned to the industry to run a long-short hedge fund after the dot.com bust, Dad pinned a copy of this cover to his office wall. It was a reminder of this misplaced faith – the moral hazard distorting market function which he believed would eventually result in dire consequences.

The central bank saviour complex has been repeatedly reinforced since then. First with the introduction of ultra-low interest rates and quantitative easing after the global financial crisis and again with the huge fiscal bailouts and monetary loosening in response to the pandemic. Each time, policymakers have promoted irresponsible risk-taking, perverse incentives and unrealistic expectations.

It seems only now, with the return of higher and more volatile inflation, that policymakers’ inability to control the forces of the financial system has been revealed.

SMALL PRINT, BIG REVELATIONS

Some time in my mid-teens, my dad had handed me a copy of Terry Smith’s *Accounting for Growth*, an exposé of how companies manipulate accounts to create the appearance of profit growth. Most of the specifics went over my head, but the main message stuck: corporate propaganda can be a million miles away from the underlying economic reality.

When Enron imploded in 2001, going from one of the world’s largest companies to the bankruptcy courts almost overnight, I (like the rest of the world) smelt a rat. So I dug out Enron’s annual 10-K report

– a comprehensive summary of a public company’s financial performance, filed annually and required by the regulator.

Could you tell it was a wrong’un just from reading that report – what the company has to tell you, not what it wants to tell you?

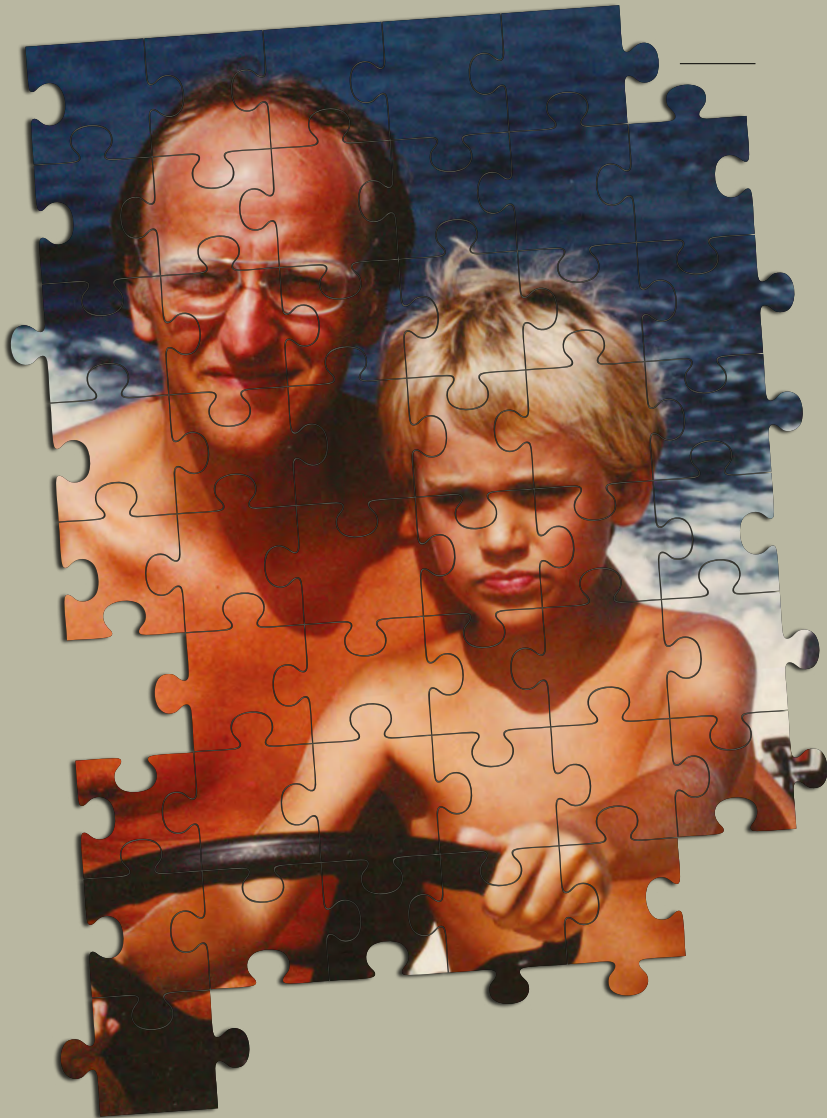
Yes, you could!

Dad always bothered to read the small print, because “if it didn’t need to be there, it wouldn’t be.”

How many analysts and investors were reading these things at all, let alone properly? I was amazed how much information could be unlocked by a careful and skilled reading of these required financial disclosures. It was like finding the corner pieces of each company’s jigsaw.

Shortly after, I joined an accounting-based research firm where I learnt to read accounts properly and relished the chance to detect and unmask corporate obfuscation.

These lessons are critical to our approach to equity analysis at Ruffer today and help us avoid catching falling knives. For example, the sell-off in tech stocks in 2022 prompted us to look more closely at the sector in the hope of identifying a bargain. But almost all of the companies we looked at shared a



common trait – the enormous use of stock-based compensation, where staff take a proportion of their compensation in newly issued stock.

Compensating staff this way is fine when the share price is rising. But it becomes a problem on the way down, when the same dollar amount of compensation requires the issuance of ever larger amounts of stock to staff, at the expense of other shareholders. Nevertheless, many companies report financial metrics which exclude this cost, in an attempt to distort the economic reality.



VANISHING VALUE

Apart from corporate and investor behaviour, one of Dad's main frustrations with the investment industry later in his life was the lack of value on offer in the stockmarket. Although he became known as a bear, he had made his reputation by backing value stocks throughout his career.

He liked being bullish, perhaps even preferred it, but felt denied this opportunity in an environment where central banks had artificially inflated and destabilised markets.

Dad was always keen to impress on me (and anyone else who would listen) the importance of taking a long enough view of history. Doing so allows us to look beyond recent investment conditions and back to the 1970s and 1980s – when value outperformed growth not just for a quarter or a year, but for the best part of two decades.

We have entered a new investment regime, in which value-driven investing appears to be making a comeback. This poses new challenges to investors, challenges Dad would have relished.

“Understanding the market was like doing a 10,000 piece jigsaw puzzle made entirely of black pieces.”



10,000 PIECES

One of the last memories I have of Dad is of him hunched over a laptop monitoring the prices of his short bets on the financial sector. This was February 2008, on his sixtieth birthday, during the early stages of an experimental treatment for his cancer.

The financial crisis was beginning to unfold, but the full weight of the crash was yet to come. He died a few weeks later, missing the final throes of the meltdown. He would have found the market dynamics utterly fascinating, though he would have deplored the devastation inflicted on so many individuals.

Dad considered it a privilege to work in investment management – a unique profession, where you can learn something new every day in economics, politics, business, technology and a host of other fields.

To him, understanding the market was like doing a 10,000 piece jigsaw puzzle made entirely of black pieces. You could devote your lifetime to it and never finish.

But the urge to find another piece, time after time, is as great a motivator for me as it was for him. ●

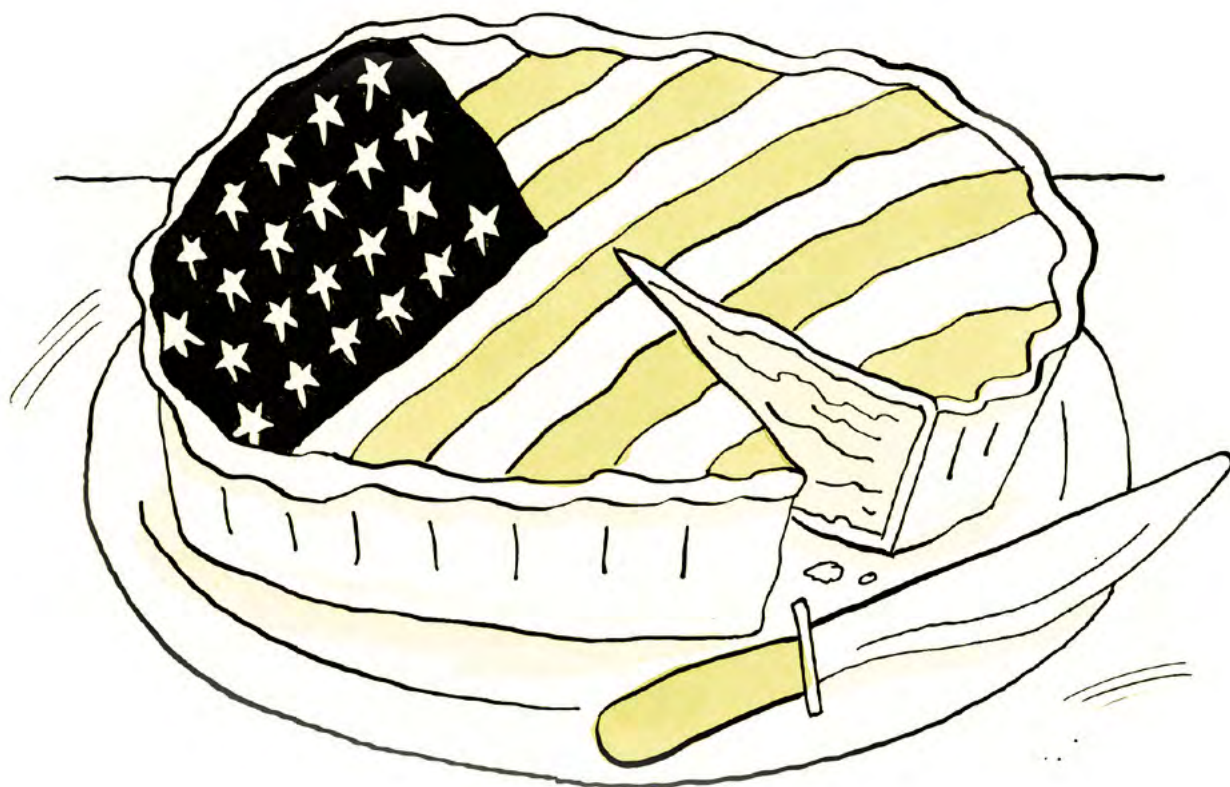
American Pie

AS INFLATION EASES THIS YEAR, IT WILL BE TEMPTING TO THINK WE ARE RETURNING TO THE OLD NORMAL. But the ancien régime of low inflation and free money is over. The adjustment process – already so painful for many investors – has further to run, and there is plenty of scope for mishaps as liquidity continues to drain from the system. The market dreams of a Goldilocks scenario, just right for risky assets. But will the bears be kept at bay?

THE DON MCLEAN CLASSIC FEELS LIKE THE PERFECT MOOD MUSIC FOR THIS YEAR'S RUFFER REVIEW.

It has been described as a song about “the nostalgia that comes with closing a chapter in time. A chapter that was good, youthful and innocent.”

When it comes to crypto, we might leave out ‘good’ and ‘innocent’. But 2022 certainly seems to mark the end of a period of exceptional growth for US markets since the 2008 global financial crisis, when falling discount rates on long duration and fantasy cashflows, large buybacks and flows from overseas favoured tech heavy US equity markets, swelling their share of the global equity pie.



BUT FEBRUARY MADE ME SHIVER

In a few years' time, we may look back on February 2022 as the peak of US financial exceptionalism. The global system dynamic is shifting from being deflationary biased towards being more inflationary biased. The old regime was a convenient exchange, primarily between America and China: between the western desire for inflation stability and emerging markets' desire for rapid industrial development.

This exchange had side effects: a massive monetary overhang in China, with a bloated banking system vulnerable to its unproductive assets; and hyper-financialisation in the US, with the economy over-reliant on a financial sector optimised for secular stagnation and sustained low interest rates. In other words, intolerant to inflation and higher interest rates.



HENRY MAXEY

Chief Investment Officer

Paradoxically, this intolerance to inflation generates inflation volatility and policy reactions which ensure an inflationary endgame. The more Volcker-like the appetite of the Federal Reserve (Fed) to crush inflation now, the more likely it breaks something in the financial system and the economy. That then forces a monetary and fiscal response which validates the new underlying inflationary system dynamic.

This will mean a bumpy journey, with inflation volatility. In 2022, we felt the force of a heavyweight inflation punch. Now, we're starting to experience the recoil.

SINGING, "THIS'LL BE THE DAY THAT I DIE"

The frailty of the 60:40 portfolio (60% equities, 40% bonds) was finally exposed, as Figure 1 shows. Rather than offsetting one another, bonds and equities fell in tandem as the Fed raised rates aggressively.

US bonds failed comprehensively to protect US equity investors. It turns out that bonds protect unless they cause the equity bear market. Then 60:40 is doomed.

But mainstream equities and bonds weren't the epicentre of the pain. Last year, our thematic suggestion was to be 'short narcissism', with narcissism proxied by 'profitless tech' companies. Figure 2 shows an index for profitless tech. The music definitely died for these stocks in 2022.

A GENERATION LOST IN SPACE

It was even worse in crypto land.

By the end of 2021, it had become a space where a younger generation, disadvantaged by low interest rates and high asset prices, were speculating to accumulate wealth.

Figure 1
**US 60:40 PORTFOLIO DRAWDOWNS
(INFLATION ADJUSTED, 1 YEAR)**

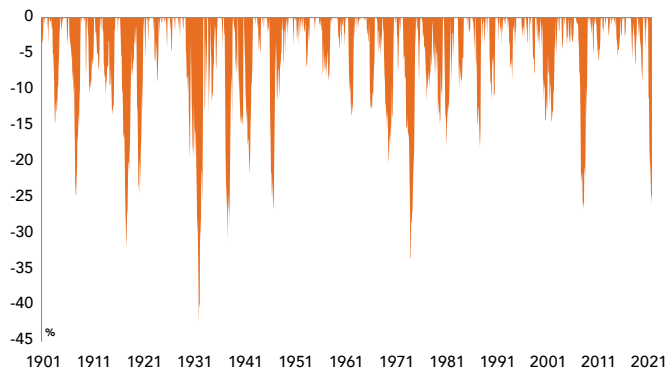


Figure 2
US UNPROFITABLE TECH INDEX

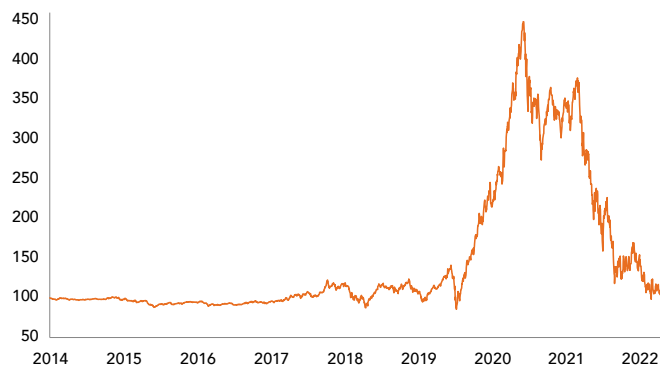
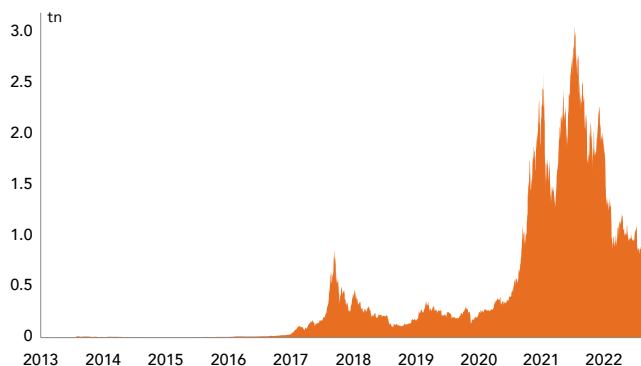


Figure 3
**TOTAL VALUE OF ALL
CRYPTOCURRENCY IN CIRCULATION**





“In 2022, we felt the force of a heavyweight inflation punch. Now, we’re starting to experience the recoil.”

Source: Ruffer, Global Financial Data
Source: Bloomberg, Goldman Sachs
Source: CoinGecko

In 2022, cryptocurrencies collapsed, with the market cap of all coins in circulation plunging from \$3 trillion to \$850 billion (Figure 3).

The fireworks ignited in May when the Terra-Luna token crashed into terra firma, precipitating the failure of various leveraged players. 3 Arrows Capital got shot, Voyager never returned, and Celsius network discovered the meaning of absolute zero. Crowning all of these was the extraordinary bankruptcy of FTX. CEO Bankman-Fried: did what it said on his tin.

Figure 4
2073 UK INDEX-LINKED GILT PERFORMANCE IN 2022



JACK BE NIMBLE, JACK BE QUICK

In 2022, the passive strategies which worked for so long failed, and investors were forced to flick the switch off autopilot.

Long-only investors had few places to hide. Cash, preferably non-sterling, was one, but it was subject to the decay of interest rates lower than inflation. Otherwise, you had to concentrate in specific equity sectors like energy or in individual commodities, which is highly risky.

You needed the ability to shift asset allocation nimbly and to hedge aggressively at the right moments. To illustrate the point, 2022 was the first year in Ruffer's history when our options protection made the biggest positive contribution to the portfolio's annual performance.

But let's look at something that didn't go so well: our core portfolio asset.

JACK FLASH SAT ON A CANDLESTICK

We have held UK long-dated index-linked bonds for many years. Our thesis: financial repression will be a key feature of the emerging regime, and the most powerful tool of financial repression is a negative real interest rate (ie below the rate of inflation).

But the market never allows you to hold the assets you need to survive financial crises without extreme discomfort. We were braced for volatility as the linkers transitioned from trading as long duration government bonds in the old environment to trading as real assets in this more inflationary regime.

Even so, the price action was breathtaking (Figure 4).

“When inflation appeared, it was deemed transitory. When it persisted, there was a pause of disbelief. Then everyone lost their nerve.”

1 Small pension funds which didn't have the derivative counterparty paperwork in place got their leveraged bond exposure through funds which were leveraged 3-5x
2 The forces of secular stagnation: debt, demographics, peace dividend and disruption/technology

'CAUSE FIRE IS THE DEVIL'S ONLY FRIEND

Perhaps, fire and leverage. Markets have a knack of exposing over-leveraged positions. That's what happened in the UK.

Former Prime Minister Liz Truss and Chancellor Kwasi Kwarteng will carry the can in the history books. However, the UK gilt market would not have dislocated so spectacularly in September but for leveraged LDI strategies. We had analysed the risk from the strategies, but we had not realised the extent of smaller pension funds' outsourcing of derivative exposures to Irish funds with far greater leverage than would have been employed if the pension funds had done the hedging directly within the fund.¹ When bond prices plummeted, the pension funds were asked to post more collateral, but they were unable to sell assets quickly enough to meet these demands. Hence, the third party funds were forced to deleverage abruptly, creating a vicious circle.

EIGHT MILES HIGH AND FALLING FAST

Ironically, just as the UK Retail Price Index showed inflation above 12%, with interest rates stuck at 2.5%, the asset specifically designed to protect against negative rates fell more than Bitcoin.

Thankfully, our hedges on interest rates, equities and credit offset the losses from the index linkers. This allowed us to trade the extreme volatility in the bonds. The end result: over the year, the interest hedges we held more than offset the loss on our linker holdings.

FOR TEN YEARS WE'VE BEEN ON OUR OWN

Until 2021, our view that the West would end up with an inflation problem was considered eccentric. It was 'obvious' that the forces of secular stagnation were too powerful.² So, when inflation appeared, it was deemed transitory. When it persisted, there was a pause of disbelief. Then everyone lost their nerve. Now, the idea of a more sustained

problem, even if inflation falls this year, has become consensus.

However, the paradox of our view is that it will be the instability of both inflation and policymakers' views of it which will lead to higher average levels of inflation in the years ahead. The inevitability of inflation is likely to stem from inflation volatility.

THE HALFTIME AIR WAS SWEET PERFUME

We're at the halftime mark in the first wave of the inflation volatility story. We've had the up; next comes the down.

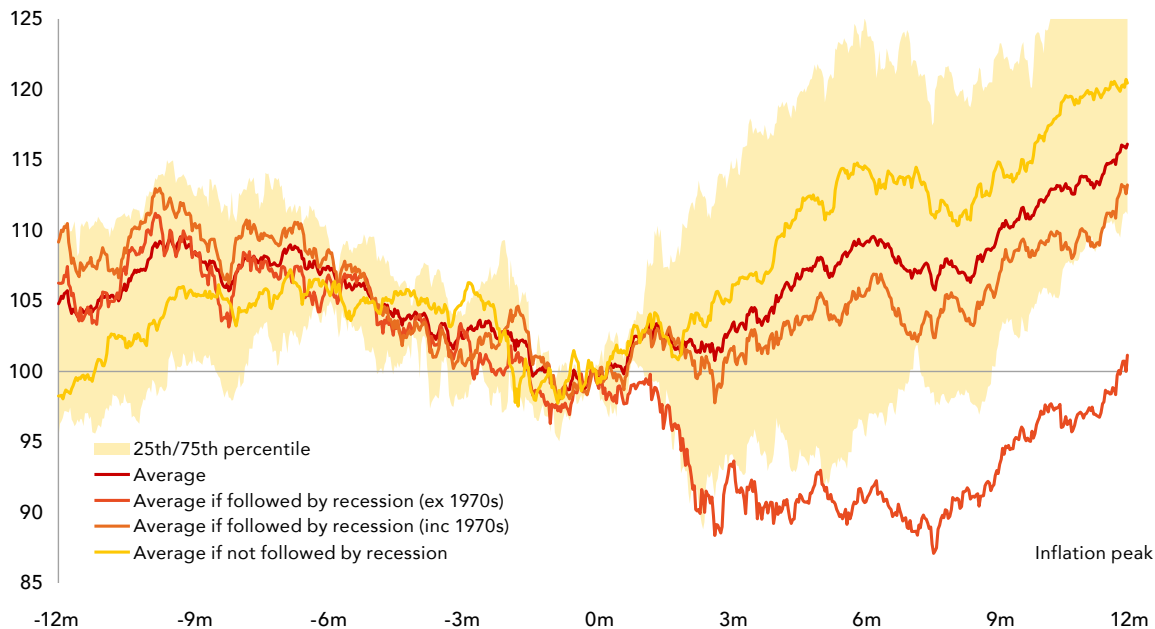
It started with sweeter smelling November 2022 CPI data than expected. Equities and bonds rallied sharply on this news. The historical justification for the rally is synthesised in Figure 5. Typically, after

inflation peaks, markets rally. But the chart also shows that, if a recession follows the peak in inflation, markets continue to suffer – except during the 1970s.

If the recession is mild in nominal GDP terms because inflation (though falling) is still elevated, that supports markets, because earnings are driven by nominal GDP. Obviously, the hope is for a similar result in 2023: inflation will fall convincingly, so the Fed will not have to drive the economy into a recession. Earnings declines will be softened by nominal growth, which slows but is not deeply recessionary, and equity multiples will find support through falls in bond yields, credit spreads and the dollar. In short: a goldilocks soft landing for the economy and risk assets.

Figure 5

POST INFLATION PEAK EQUITY OUTCOMES DETERMINED BY GROWTH



NO VERDICT WAS RETURNED

While the market appears to be pricing this goldilocks narrative, market commentators remain bearish. The yield curve is inverted, and leading economic indicators are turning down, confirming economists' consensus of an oncoming recession. Logically, therefore, earnings estimates remain way too high.

So why did markets rally from their October 2022 lows? The rally was probably driven by portfolio repositioning by the systematic investing community.³ These buying flows would have been triggered by the first signs of cooling US inflation and labour markets, reducing uncertainty about how high US rates will rise. With less uncertainty on rates, volatility can fall, and falling volatility drives flows into risky assets. Once these flows raise asset prices and change price trends, trend following investors start buying mechanically, blind to the recession's impact on earnings.

So what should investors pay attention to? This question gets to the heart of the hyper-financialised system. Investment flows, driven by statistics like volatility and moving averages, appear more fundamental than actual fundamentals, such as earnings outlooks. After many years of stimulus and cheap money, the prospects for cheap money and investment flows now outweigh the prospects for profits.

So, to invest in today's markets, an investor needs to understand and anticipate changes in flows. And this requires judgements on the size and composition of balance sheets in the financial sector, particularly commercial and central banks.

“After many years of stimulus and cheap money, the prospects for cheap money and investment flows now outweigh the prospects for profits.”

BAD NEWS ON THE DOORSTEP

Last year, we argued that liquidity pressures posed a growing threat to financial markets and risky assets.

Central to the argument was that changes in the size and composition of the Fed's balance sheet would be a headwind for asset prices. Quantitative tightening (QT) was shrinking the size of the balance sheet, and the growing scale of the Fed's reverse repurchase (RRP) facility was shifting its composition; the net effect was falling commercial bank reserves. Meanwhile, regulation was constraining commercial banks' appetite to expand their balance sheets, and strong nominal economic growth was shifting the composition of the balance sheet towards activities which support the operations of the economy and away from activities which support the liquidity of financial markets.

³ These quantitatively driven funds tend to adjust their portfolios according to volatility and trend signals

Figure 6 captures the key relationship. Changes in commercial bank reserves held at the Fed – a function of changes in the size and composition of balance sheets – have a close relationship with equity returns.

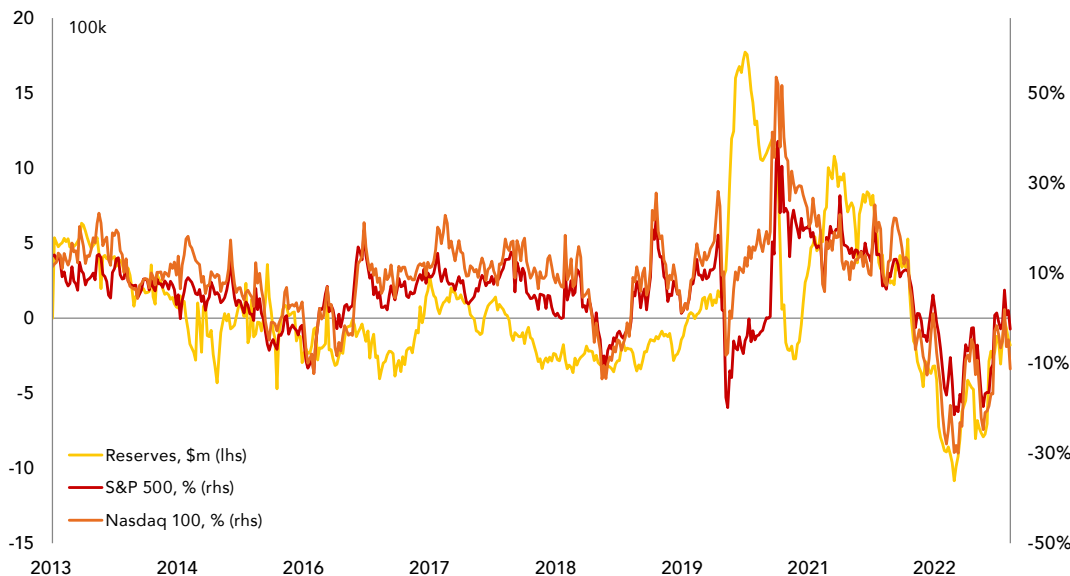
But why? Bank reserves result from commercial banks deciding to deposit money at the Fed rather than deploying it into riskier activities like loans. In theory, they should not influence asset prices. Yet, in practice, they seem to.

A paper presented at the Fed's 2022 Jackson Hole conference suggested one explanation.⁴ It argues that, during QE, banks may seek to increase fees by expanding claims on their balance sheets, such as lines of credit. However, while banks tend to expand these claims during QE,

they do not seem to shrink them during QT. This leaves them with less spare liquidity at stress points – for example, when a pandemic causes businesses to draw down all available credit simultaneously.

In essence, reserves are not nearly as abundant as the headline numbers suggest. So, as monetary tightening drains reserves, this bites on market liquidity sooner than expected. Precautionary demand for reserves can then amplify the tightening liquidity dynamic because reserves are considered the highest quality liquid form of collateral to meet margin calls from central counterparty clearing houses and derivative exposures when markets become stressed. This creates a 'dash for cash' liquidity doom loop, like in March 2020.

Figure 6
SIX MONTH CHANGE IN US LIQUIDITY VERSUS EQUITY INDICES



“ In essence, reserves are not nearly as abundant as the headline numbers suggest. So, as monetary tightening drains reserves, this bites on market liquidity sooner than expected.”

THEM GOOD OL' BOYS WERE DRINKING WHISKEY AND RYE

If your eyes are glazing over, here's an analogy: even if the party doesn't need more punch, you can't drain the punchbowl, because too many partygoers have intravenous drips connected to it. Faced with the excess liquidity created by QE, the financial system has adapted in ways which make it hard to tighten monetary policy without causing financial stress.

'Eureka!' Don't we have an Archimedes' principle for financial markets? If we can predict how liquidity will behave, we can anticipate the direction of financial markets.

Sadly, predicting reserves is not straightforward. The relationship between bank reserves and markets seems to have two-way causality. Exogenously driven changes in reserves impact markets; but market movements can also drive changes in reserves. And the relationship is even less predictable in the current monetary policy framework. That's because the RRP

facility can either dam up or release liquidity, depending on what different agents in the financial system are doing.

At times, one side of this relationship will prevail over the other. For example, if exogenous news is not supportive of markets, Fed shrinking of reserves via QT is likely to be a headwind for equities. The challenge is predicting the behaviour of the many different agents.

- Depositors (retail and institutional) – will they move money from low yielding bank deposits to much higher yielding money market funds (MMFs)?
- MMFs – will they seek to invest in very short duration assets like the Fed RRP or longer duration assets like 3-12 month T-bills?
- Other investors of various flavours – will non-bank risk takers be willing to pay a premium over the Fed's RRP rate to secure funding from MMFs, thus reducing the RRP balance sheet?
- US Treasury – how will it manage the balance of its Treasury General Account (TGA) held at the Fed? Might it engage in a treasury buy-back operation in the bond market?
- Commercial banks – will banks want to expand their gross or risk weighted assets, given current regulatory constraints?
- Regulators – will they ease the supplementary leverage ratio (SLR), which could increase banks' balance sheet flexibility?
- The Fed – will it continue quantitative tightening into a slowing economy?



In the medium term, we think the Fed will convince markets it intends to keep rates restrictive for longer than expected while maintaining its QT policy. So bank deposits will steadily migrate to MMFs in search of higher yields. As a result, RRP balances are likely to grow or remain at high levels. The Treasury is currently running down the TGA as the debt ceiling looms but will rebuild it during 2023. And commercial banks don't have capacity to aggressively expand their balance sheets, particularly since they are currently facilitating rapid commercial and industrial lending. All these tendencies argue for reserves to fall.

The main offset to this reserves drain comes from an increase in the risk taking appetite of non-bank financial players, which either invest their cash balances or leverage their balance sheets via private funding

markets. Many are systematic investors, and this is what appears to be driving markets and reserves higher from the lows of October, triggered by the first signs of inflation and labour markets cooling.

This makes for an unstable liquidity dynamic. Liquidity can seem fine until risk appetite wanes – then suddenly it isn't. And many more agents now influence changes in reserves than before 2008. So, when the Fed wants to adjust monetary policy, it cannot be sure how it will affect the supply of and demand for reserves.

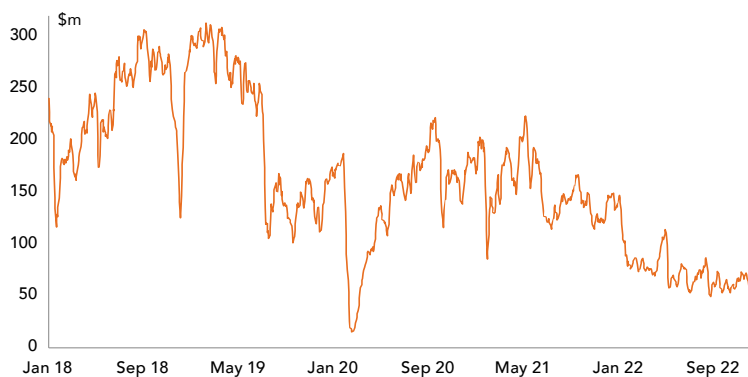
I SAW SATAN LAUGHING WITH DELIGHT

What's worse, the Fed can no longer rely on the US treasury market as a source of stability at moments of stress.⁵

⁵ To understand why treasury markets have become this sensitive, see Lev Menand (2022), *The Fed Unbound*, which analyses the shadow banking problem. Source: Goldman Sachs Global Markets Division, UST 10s, average of amount bid and offered within three levels from mid, five day average. Data to 23 Jan 2023

“ Even if the party doesn’t need more punch, you can’t drain the punchbowl, because too many partygoers have intravenous drips connected to it.”

Figure 7
TOTAL TREASURY MARKET DEPTH



In the September 2019 and March 2020 crises, the treasury market became dysfunctional, requiring the Fed to step in. This is extremely concerning, as the market is supposed to be deep and liquid, representing the global risk-free reference point for free-market capitalism. If it keeps ‘bugging’, that not only makes it hard to operate monetary policy but also unsettles the core of the capitalist system.

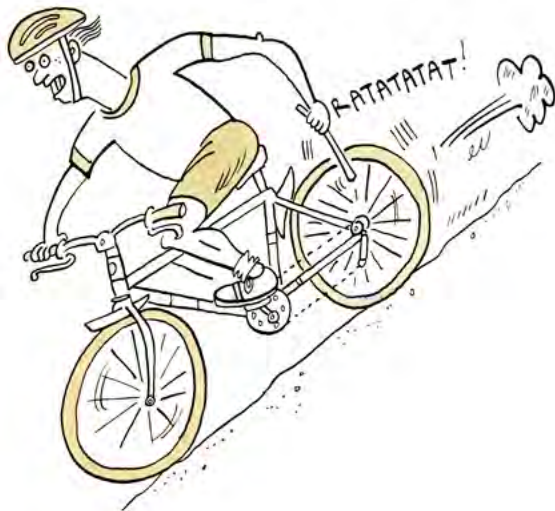
There are two elements to the problem, the chronic and the acute. The chronic problem results during monetary tightening in an ample reserves regime when nominal GDP growth is high and commercial banks feel constrained by regulation. Main Street lending crowds out Wall Street financing. In effect, monetary tightening discourages banks from engaging in low margin, more leveraged activities, like treasury repo and FX swap markets.

Why? Because they are balance sheet constrained, banks prefer to focus on higher margin, less balance sheet intensive activities like commercial and industrial lending, for which the growing nominal economy has demand. This reduces the liquidity of the treasury market.

THE LEVEE WAS DRY

The depth of liquidity in the treasury market has declined through time, even as the market’s size has grown substantially (Figure 7). We can also see how the market’s depth decreases during periods of market stress (2018, 2019, 2020 and more gradually in 2022).

The acute problem arises because reserves are considered the highest quality collateral. When markets become stressed, the need for collateral increases dramatically, leading to a dash away from treasuries into reserves.



“Think of central banks’ problem as like using a stick to slow a bicycle that’s careering down a hill.”

This outcome is perverse: monetary tightening disproportionately impacts the liquidity and market functioning of the least risky assets in the market, US treasuries. This makes treasuries unstable when riskier assets start feeling the effects of tightening.

So it is tough for the Fed to gauge the appropriateness of its balance sheet policy, as measured by reserves. The UK’s bond market crisis in September brought these fears to the fore once more.

THE KING WAS LOOKING DOWN

This has made the Fed cautious. At his November Brookings Institution speech, Fed Chair Jerome Powell was asked when he will end QT. After noting we were “not close to reserve scarcity”, he warned that “the demand for reserves is not stable and can move up and down very substantially” – a direct reference to March 2020’s hiccup.

The biting point of reserves is a known unknown, and Powell doesn’t want to test it too hard, because the wiring of the financial system has severely undermined his ability to calibrate policy appropriately to secure a smooth landing.

Think of central banks’ problem as like using a stick to slow a bicycle that’s careering down a hill. The Fed realises the only way to brake without putting the stick in the spokes and causing an accident is to rub the stick hard against the spokes. But even placing the stick close to the spokes has become dangerous because the axel of the bike (the treasury market) becomes unstable just as the stick starts to twang against the spokes.

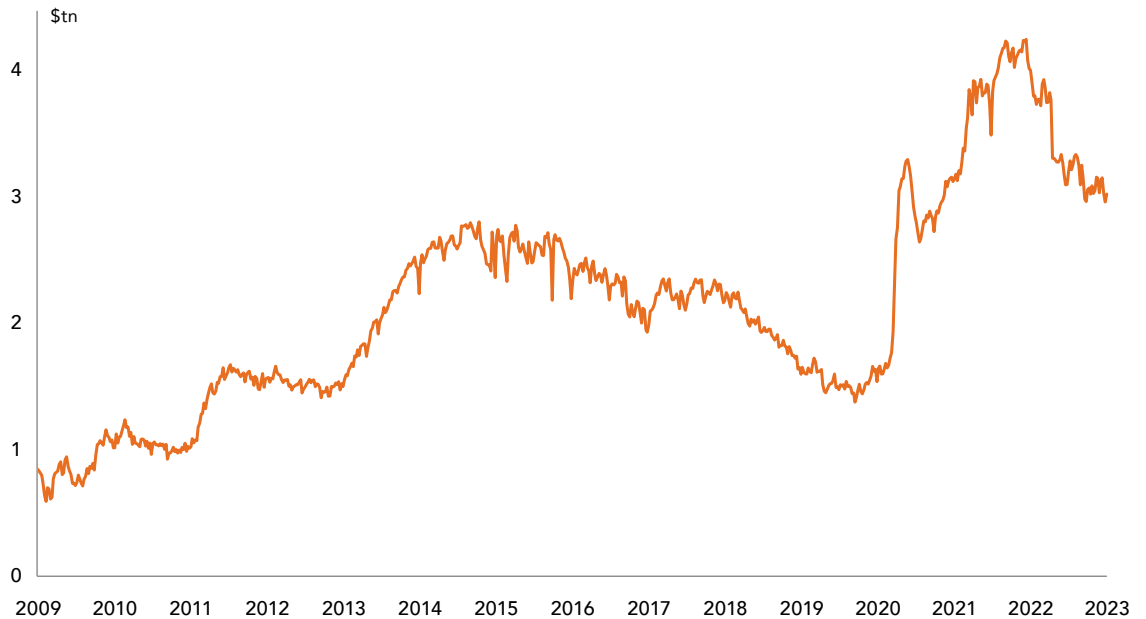
So the Fed has to hope the road ahead changes from downhill to sufficiently uphill. But, because of our hyper-financial system, if it stops braking too soon, the hill may become less steep and not slow the bike enough. Braking both slows the bike and reduces the gradient of the road ahead. Who wants to ride that bike?

CAN MUSIC SAVE YOUR MORTAL SOUL?

Can the Fed do anything to help liquidity in the treasury market when it gets stressed?

Yes. If forced to, the Fed and the US Treasury have options to ease stresses without having to stop QT.

Figure 8
BANKS' RESERVE BALANCES WITH FED



The two most prominent

1. Exempting treasuries from the calculation of leverage in SLR calculations. In effect, this would allow banks to expand their balance sheets to buy treasuries without having to put up more capital. This would undoubtedly supply a lot of liquidity to the treasury market, but it would probably be seen as helping the banks.
2. Issuing short duration T-bills in order to buy back longer duration treasury bonds. By removing duration from the markets, this would probably be viewed as monetary easing, which runs counter to the Fed's stated ambition of vanquishing inflation. The effect: a treasury market put.

THAT'S NOT HOW IT USED TO BE

Indeed. Investors have grown accustomed to the idea that the Fed cares about the equity market. The Fed put. But that was in the disinflationary regime when tightening financial conditions would suck any inflation out of the economy fast. If equity prices fell too far, the Fed could ease without risking inflation expectations becoming unanchored.

Today, the economy has more momentum, thanks to the monetary and fiscal stimulus during the pandemic. So, especially given banks' preference for Main Street lending over Wall Street financing, greater tightening of financial conditions is needed to slow things down.

But, if a proper tightening of financial conditions destabilises the treasury market and threatens financial Armageddon,

policymakers will intervene. Hence, the treasury market put. How might this play out?

The Fed continues with tight monetary policy and draining of reserves until it gets closer to what it considers the biting point. In 2019, it turned out to be \$1.4 trillion, well above the expected \$800 billion (Figure 8, previous page). Various commentators and ex Fed governors have suggested the biting point today is \$2-2.5 trillion. That implies between \$600 billion and \$1 trillion of reserves drain is still possible before the Fed lifts off QT.

This drain of reserves will put pressure on risky assets. If that starts to unsettle the treasury market, expect to see the treasury market put deployed. While supportive of equity markets, it would be from much lower levels than today, and the prime beneficiary would be treasuries, not equities.

NO ANGEL BORN IN HELL COULD BREAK THAT SATAN'S SPELL

So policymakers are hostage to Goldilocks. Inflation must quickly prove transitory without needing a financial dislocation to make it so.

The early signs of slowing inflation have allowed the Fed to give the market greater confidence about where the peak in rates might be. But the Fed is at pains not to clarify how long rates will stay at that level. In fact, it assumes it will have to maintain peak rates for longer than the market expects.

Markets have leapt out of the frying pan and into the fire. Unless recession pours water on the flames.

The longer we spend at peak rates, the more policy will drain reserves and the more portfolios' asset allocations are likely to be

“ So policymakers are hostage to Goldilocks. Inflation must quickly prove transitory without needing a financial dislocation to make it so.”

adjusted away from risky assets, reinforcing negative investment flows.

These flows don't appear to have happened yet (Figures 9 and 10).

Goldilocks still has a lot of work to do to bail out the Fed.

DO YOU BELIEVE IN ROCK 'N' ROLL?

But the market wants to believe. It doesn't mind the rock of oncoming recession because it looks through to the roll of falling interest rates and a return to cheap money. It's all positive if recession is coming resolutely but softly in nominal terms, and disinflation (not deflation) is coming fast and loudly. This is reflected in the interest rate cuts already priced in for the second half of 2023.

But the disinflationary trends may be slower to emerge, because of the stock effects of the massive monetary easing covid precipitated.

Figure 9
CASH AND ALTERNATIVES AT G4 PENSION FUNDS AND INSURANCE COMPANIES (QUARTERLY, % OF TOTAL ASSETS)

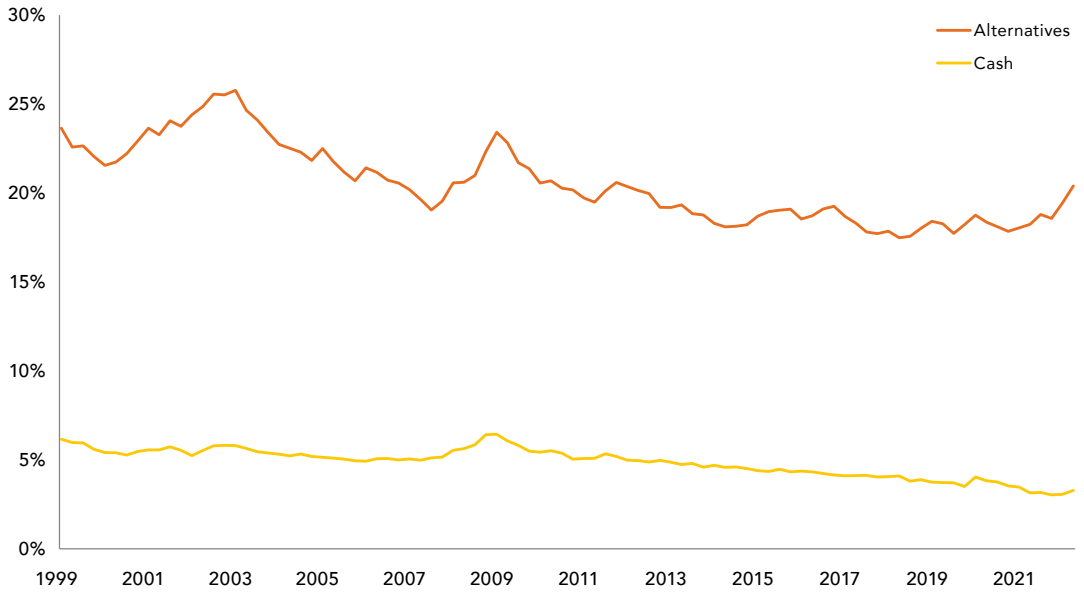
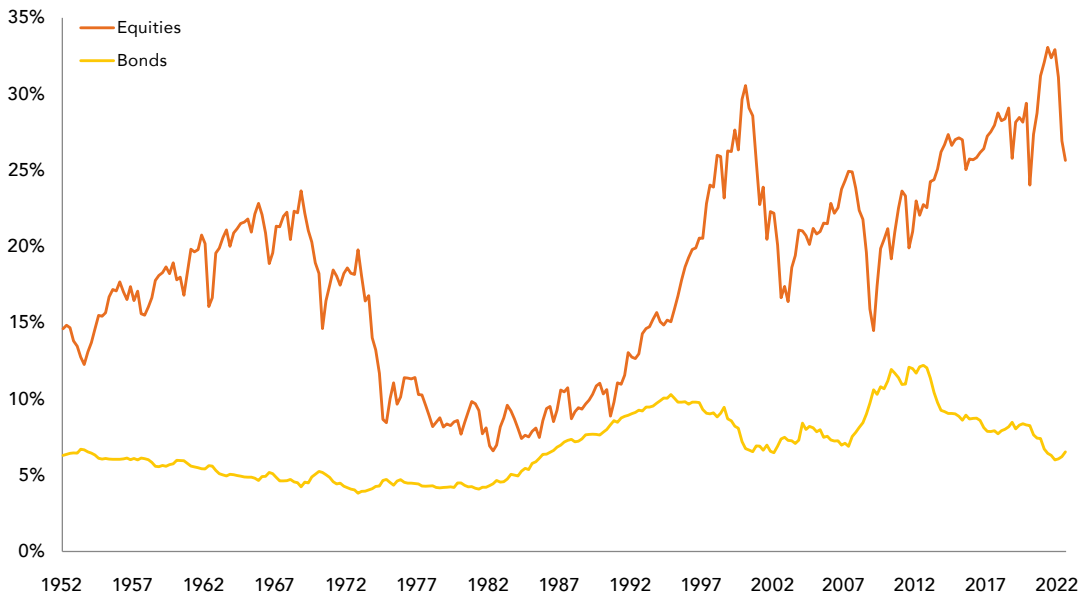


Figure 10
EQUITIES AND BONDS AS % OF HOUSEHOLD NET WORTH



Source: JPMorgan, ECB, BOJ, BOE, Fed
Source: Fed, Ruffier

Many leading economic indicators suggest slowing growth, but the labour market seems stickier in its hotter state (Figure 11).

So disinflation may be coming too slowly, while a profits recession is coming faster, and the Fed is going to stay restrictive for longer.

Of course, exogenous developments – including a potential resolution to the Ukraine war, the end of yield curve control in Japan and the reopening of the Chinese economy post zero covid – could affect markets for good or ill.

For now, though, the Goldilocks narrative is back. But it seems to be chasing rather than driving price action, which would be consistent with the rally being driven by repositioning and technical factors.

SHE JUST SMILED AND TURNED AWAY

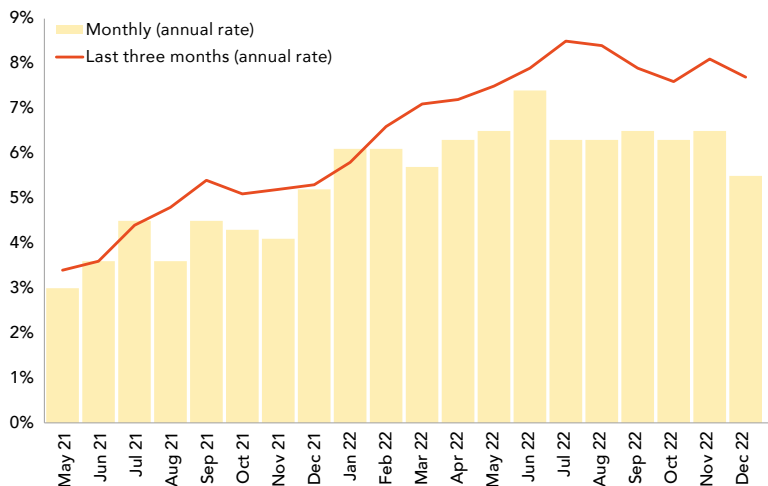
It is hard to have high conviction on any particular pathway. A Goldilocks fairy tale for 2023 can't be dismissed completely; the data and events could coincide to deliver the 'not too hot, not too cold' outcome. But it's a walk in the dark through a dense forest to get there and, even if we do, a Goldilocks economy does not guarantee a Goldilocks outcome for corporate earnings. 'Just right' for the economy might still equate to 'cold porridge' for corporate profits if margin pressure bites. And cold porridge won't keep the bears away.

Liquidity remains a key consideration. It is difficult to call an end to the bear market whilst the Fed is still draining reserves.

This is a function of explicit balance sheet policy, QT and interest rates, which motivate savings to shift from bank deposits into MMFs.

Predicting the short run pathway of reserves is difficult, but we know the effect and intention of policy is to shrink them

Figure 11
US BUSINESS SECTOR UNIT LABOUR COST GROWTH



further. While that remains the policy, risk-on interludes and Goldilocks narratives should be treated with caution. To get bullish, we need to see a proper Fed pivot, not a Fed pause. We need confidence in interest rate cuts and QT being paused. Or deployment of the treasury put.

SINGING, "THIS'LL BE THE DAY THAT I DIE"

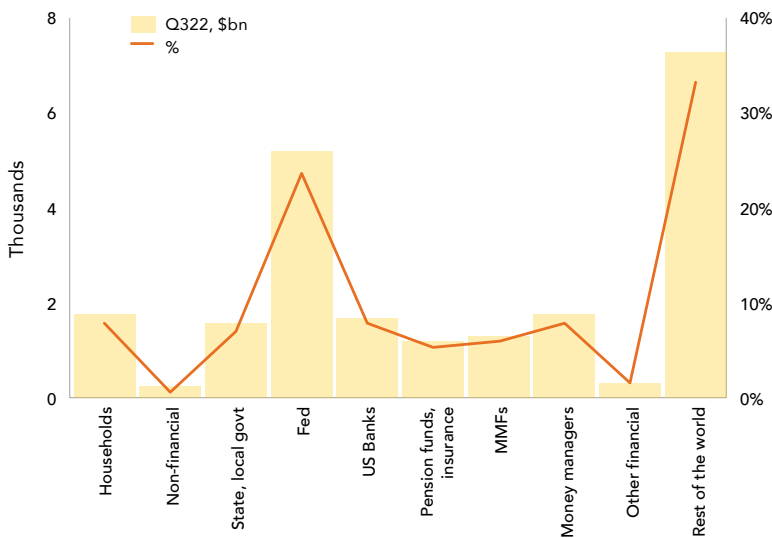
In the end, inflation will fall down and play dead in 2023 even if it doesn't fall fast enough to bail out markets from the Fed's liquidity drain.

When inflation has fallen, many will think we can return to the pre-covid regime. That would be a mistake. The system is now more capable of generating inflation than the prior regime conditioned us to believe.

Here's how this might unfold. Fiscal policy has proved effective at stimulating



Figure 12
OWNERSHIP OF THE US TREASURY MARKET



Source: Federal Reserve

the economy directly, rather than relying on monetary policy to be transmitted via Wall Street, with all the inequality that generated. Unfortunately, the UK's recent experience has scared governments, so fiscal policy is unlikely to be used pre-emptively. Unemployment will first have to overtake inflation as the political issue of the day.

When stimulus comes, it is likely to take the form of industrial policy, reflecting the growing strategic competition with China. Spending will be targeted at strategic industries, defence and the energy transition.

In the US, the treasury market will need to be relied upon as a source of stable funding. Currently, foreign owners dominate the market (Figure 12).

Domestic ownership of US bonds will probably have to increase, with banks and their broker-dealers needing to own more and intermediate more. So I expect policymakers to reduce balance sheet constraints to improve liquidity and let banks own more bonds.

Because all governments face the same strategic challenges, industrial policies are likely to direct resources at similar things. Consequently, when policy turns stimulatory again, we're likely to revisit supply side constraints and bottlenecks. Geopolitics will also keep throwing in disruptive curve balls, whether in the South China Sea, the Middle East, Pakistan or around Russia.

Given our experience with inflation over the past two years, we are all now primed – psychologically and behaviourally – to anticipate it. So the inflationary tinder will catch alight much more easily next time conditions are conducive.

This inflationary dynamic will be unique in one important respect. It will be like the 1960s-1970s inflationary dynamic but in reverse: this big initial inflation wave will be followed by waves which are successively smaller but on a rising trend.

We are also likely to see more currency crises. As the UK's experience shows, currencies will be punished hard when policies are out of synch with US policy and domestic inflation trends.

So the dollar is key to policymaking. If you are a true sovereign – ie control your own printing presses – and the dollar is in a weakening trend, fiscal policy will be an effective means of stimulating the economy with less risk of stress on your currency and bonds. Unfortunately, the Truss government failed to recognise this timing aspect of its growth policy.

In summary, liquidity dynamics are the key driver of the next leg of our inflation volatility thesis. But it is the lens of inflation volatility which should shape portfolio management strategy. So the autopilot stays off. Investors will have to remain active in their asset allocation, imaginative in the

tools they use and mindful of a new regime which is corrosive to passively held wealth.

WE STARTED SINGING BYE-BYE, MISS AMERICAN PIE

Last year, capital preservation became a much higher hurdle.

The inflation punch was hard, forcing the Fed to abandon its transitory framework and consider a new regime where supply shocks are a recurrent feature of the landscape.

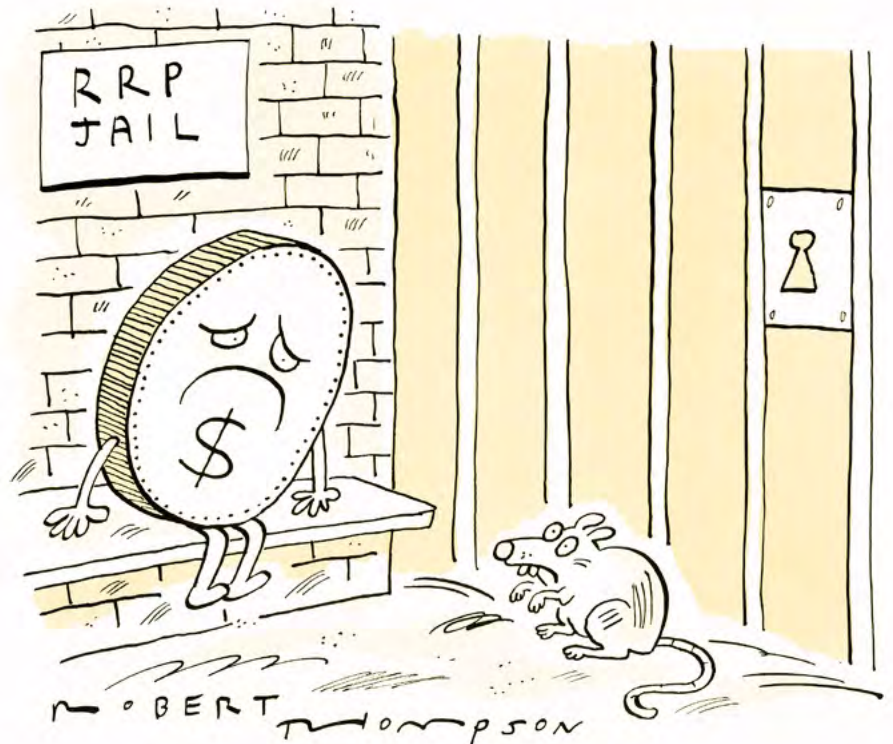
So rising interest rates did the damage in 2022. The music died for the 60:40 investment paradigm, built on a system dynamic which was biased towards disinflation but is shifting to one biased towards inflation.

A lot of other hope in markets died too, as a western financial system wired for zero interest rates confronted US rates at 4.5%-5%. In a face-off between inflation and the wiring of hyper-financialisation, the latter will prevail. Falling inflation in 2023 will be the product. Whether this is supportive for markets will depend on the interplay of liquidity and fundamentals. The \$2 trillion in the Fed's RRP facility means ample liquidity is available to the system, but it can easily get trapped in that facility.

We are in a transition from peak interest rate volatility – as the market gets confident about the upper limit on US interest rates – to uncertainty over how long peak restrictiveness lasts.

The first phase of this is bullish for risky assets: declining volatility drives money back into markets, improving price trends, which triggers repositioning buying by trend following investors. In this phase, the market can dream about a Goldilocks narrative for 2023: not too hot on the inflation front for the

“ For investors, it means another year when portfolios, like Tesla cars, can’t be fully self-driving.”



Fed; not too cold for the nominal economy and corporate earnings; just right for risky assets.

Once this repositioning has happened, though, the dynamics of liquidity – proxied by commercial banks’ reserves at the Fed – are likely to reflect ongoing QT and the need for markets to price in interest rates remaining at peak restrictiveness for longer than currently expected. In short, liquidity headwinds are likely to reassert themselves.

For equities and credit, a positive outlook relies on a Fed pivot, not a Fed pause. Only continued disinflationary surprises could bend the Fed towards the market’s expectations of rate cuts in the second half of 2023. In hyper-financialised markets, cheap money matters more than profits; but profits still matter. Expecting Goldilocks seems a triumph of hope over realism.

More generally, equities and other risky assets face an asset allocation headwind. For investors seeking a nominal return, bonds

now offer a risk-free alternative. This should result in a lower allocation to risky assets.

For bonds, tightening liquidity could provoke stresses in the treasury market as risky assets sell off. This would probably result in policy intervention. Conversely, if the data is surprisingly disinflationary, bonds will continue to rally. So, while there might be more volatility ahead, 2023 should ultimately be a good year for bonds.

For investors, it means another year when portfolios, like Tesla cars, can’t be fully self-driving. The terrain ahead will change with the interplay between liquidity and fundamentals, and impactful global developments could dash into the road at any time. Not a journey to be undertaken with passive vehicles.

In the end, wealth is getting reallocated as asset markets reorientate to the new regime.⁶

Bye-bye, Miss American Pie. ●

HOW CAN WE TRANSLATE THE UNSTRUCTURED DATA OF THE FEDERAL RESERVE'S BEIGE BOOK ECONOMIC UPDATES INTO A TOOL WITH PREDICTIVE POWER?

Use an eighteenth century statistical theorem, of course - a theorem which also stopped the early internet being buried under a mountain of spam.



HENRY JOLLIFFE

Research Director

LIKE SO MUCH THAT IS PURE AND DECENT IN THE WORLD, OUR TALE BEGINS IN TUNBRIDGE WELLS.

Here, Thomas Bayes, a Presbyterian minister, first expounded Bayesian inference, which provides the statistical theorem for the intuitively simple but logically complex process of revising our beliefs in light of new evidence. For example, Bayesian logic allows us to re-evaluate the probability that it will rain on a clear summer's day once a brooding storm cloud has appeared on the horizon.

PARKING BAYES

As so often with works of genius, the true implications of Bayes' insights were not appreciated until long after his lifetime. Following his death in 1761, his friend and collaborator Richard Price refined and developed Bayes' work, presenting *An Essay towards solving a Problem in the Doctrine of Chances* at the Royal Society in 1763 – to no great acclaim.

It was not until 1812, when French polymath Pierre-Simon de Laplace independently addressed the problem in his *Théorie analytique des probabilités*, that the general version of the theorem was formulated, formally representing what is now known as Bayes' theorem.

“Bayesian methods were ideally suited to the problems of the nuclear age, which required assigning probabilities to events that had never before occurred, like the accidental detonation of a hydrogen bomb.”

YIKES!

To better understand the intuition behind this equation, imagine two opaque jars, one containing 50 blue balls and 50 red balls and the other containing 99 blue balls and one red ball. You are given one of these jars at random and you pick one ball from it, also at random. If the ball you picked is red, what is the likelihood it came from the first jar?

Intuitively, we know that the much higher number of red balls in the first jar makes it far more likely the red ball is from the first jar. Bayes' theorem enables us to put a numeric probability on this intuition. In this case, if we plug the probabilities into the equation, the answer is 98%.

Despite its superficial simplicity, the significance of Bayes' insight is hard to overstate.

$$P(A | B) = \frac{P(B | A) \cdot P(A)}{P(B)}$$

Where

$P(A|B)$ = Probability of A occurring given that B is true

$P(B|A)$ = Probability of B occurring given that A is true

$P(A)$ = Probability of observing A

$P(B)$ = Probability of observing B

HAVE YOU GOT ANYTHING WITHOUT SPAM?

One successful application of Bayes' theorem led to the creation of junk email filters. It also gave us the idea for an applied use in macroeconomics (which we shall explore below).

The dawn of the new millennium brought the widespread adoption of email. But no sooner had humanity invented a new means of ultra-cheap mass communication than it was turned into a new avenue for the dissemination of misinformation, fraud and noise on an unprecedented scale.

In the early 2000s, unsolicited automated email (called 'spam' in homage to a 1970 Monty Python sketch) posed an existential threat to the nascent internet. A study commissioned by the Pew Research Center in 2003 found that over half of all email was spam, and 12% of personal email users were spending up to half an hour a day dealing with it. The study concluded that "spam is beginning to undermine the integrity of email and to degrade the online experience."³

This echoed the Congressional testimony of the (unfortunately named) Orson Swindle, Commissioner of the Federal Trade Commission, earlier that year that "spam is about to kill the 'killer app' of the internet."⁴

To the modern reader, these claims seem to verge on the hysterical. In the 15 years I have owned an email account, I haven't had to spend any time dealing with spam. Yet spam still accounts for 45% of all electronic correspondence – as a quick check of your junk folder will reveal.⁵ So why is it no longer a problem?

“No sooner had humanity invented a new means of ultra-cheap mass communication than it was turned into a new avenue for the dissemination of misinformation, fraud and noise on an unprecedented scale.”

3 Pew Research Center (2003), Spam: How It Is Hurting Email and Degrading Life on the Internet

4 The Washington Post (2003), FTC seeks broader powers to fight spam; Chicago Tribune

5 Statista (2022), Spam: share of global email traffic 2014-2021

“Somewhat to our surprise, this novel approach worked well. Our results clearly identified each of the six major economic cycles since the mid-1970s.”

BAYES TO THE RESCUE

During the race to develop and refine spam filtering software, one approach stood out. Proposed by the American computer scientist Paul Graham in 2002, this solution reframed the problem in Bayesian terms.⁶

Rather than two jars of blue and red balls, Graham used two bags of words. One bag contained the words from a corpus of genuine correspondence (ham), the other words from a corpus of spam. By comparing word frequencies between the bags, Graham was able to assign to each word the probability that it belonged in either a spam or a ham email. Unsurprisingly, terms like ‘click’, ‘subscribe’, ‘\$\$\$’ and ‘Viagra’ were found far more often in spam.

Emails could be reviewed automatically against these probability tables, with the scores for the individual words combined into an aggregate score for the email, thus deriving the probability that it was spam.

Two years later, at the inaugural Conference on Email and Anti-Spam (and doubtless the hottest ticket in town), Tony Meyer and Brendon Whateley presented a software solution, SpamBayes, building on Graham’s original insights.⁷

Spam was cured.

PARSING THE BEIGE BOOK

The Beige Book (officially, the *Summary of Commentary on Current Economic Conditions*) is a report published by the Federal Reserve (Fed) eight times a year, before the meetings of the Federal Open Market Committee. It contains anecdotal information from each of the Fed districts around the US on a broad range of economic conditions.

6 Graham (2002), A Plan for Spam
7 Meyer, Whateley (2004), SpamBayes: Effective open-source, Bayesian based, email classification system

Since the Beige Book's first publication in 1970, the corpus amounts to 455 books and over 5.5 million words (the equivalent of 300 hours of continuous reading), forming a unique historical record of the US economy.⁸

It also constitutes a prime example of unstructured data. Unlike structured data – that is, statistics diligently compiled into easily accessible numerical formats such as timeseries and tables – unstructured data is inherently harder to analyse quantitatively.

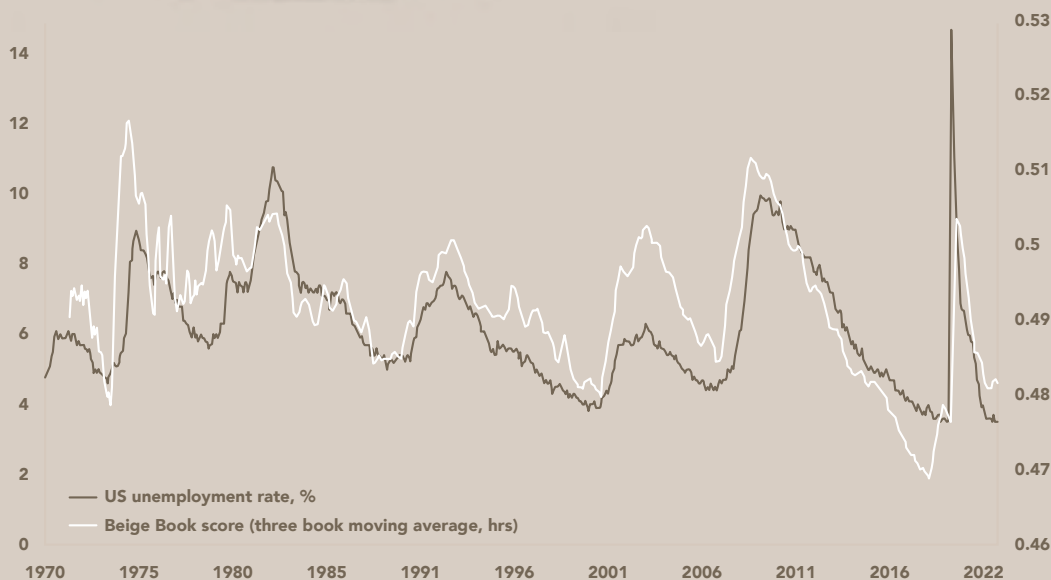
The challenge we set ourselves: could we use Grant's Bayesian methods for dealing with spam to cut through this lack of structure and score Beige Books based on macroeconomic variables?

SPECIALISED LEXICONS

Using the Beige Book corpus, we generated two bags of words. One contained words found in the Beige Books when unemployment rose in the six months after publication, while the other contained words found when unemployment fell in the next six months. These bags allowed us to score Beige Books with a probability that unemployment would subsequently fall or rise (Figure 1).

Somewhat to our surprise, this novel approach worked well. Our results clearly identified each of the six major economic cycles since the mid-1970s (with the possible exception of the 1981-1982 recession). The Beige Book may be an uninspiring read, but the homogeneous nature of the corpus, with similar phraseology used repeatedly in

Figure 1 US UNEMPLOYMENT *versus our* BEIGE BOOK
unemployment SCORE



Source: Ruffer, Federal Reserve Bank of St Louis, data to October 2022

Figure 2 BEIGE BOOK BAGS OF words

| INCREASE IN unemployment | | Decrease in UNEMPLOYMENT | |
|--------------------------|---------|--------------------------|---------|
| Word | SCORE % | WORD | Score % |
| WEAKEN | 67 | Reporting | 69 |
| CUT | 66 | Strengthen | 67 |
| WEAKNESS | 65 | Restaurant | 66 |
| REDUCE | 62 | Moderately | 66 |
| PROBLEM | 61 | Robust | 65 |
| WEAK | 61 | Hiring | 65 |
| DROP | 60 | Modestly | 65 |
| TIGHT | 59 | Modest | 63 |
| DECLINE | 59 | Positive | 62 |
| CAR | 59 | Staffing | 62 |

Source: Ruffer, top 10 highest scoring words occurring a minimum of 1,000 times

similar contexts, makes it an unexpectedly good subject for Bayesian techniques.

Reassuringly, looking inside our bags for words that correspond strongly with either an increase or a decrease in unemployment (Figure 2), we find words that make intuitive sense ('problem', 'drop' and 'weak' versus 'robust', 'strengthen' and 'positive').

By scoring Beige Books in this way across a range of macroeconomic variables, we can assess the underlying state of the US economy. In addition, we can produce a range of specialised lexicons to glean insights from other sources, including corporate filings and earnings call transcripts.

AMONG THE CONVERTS

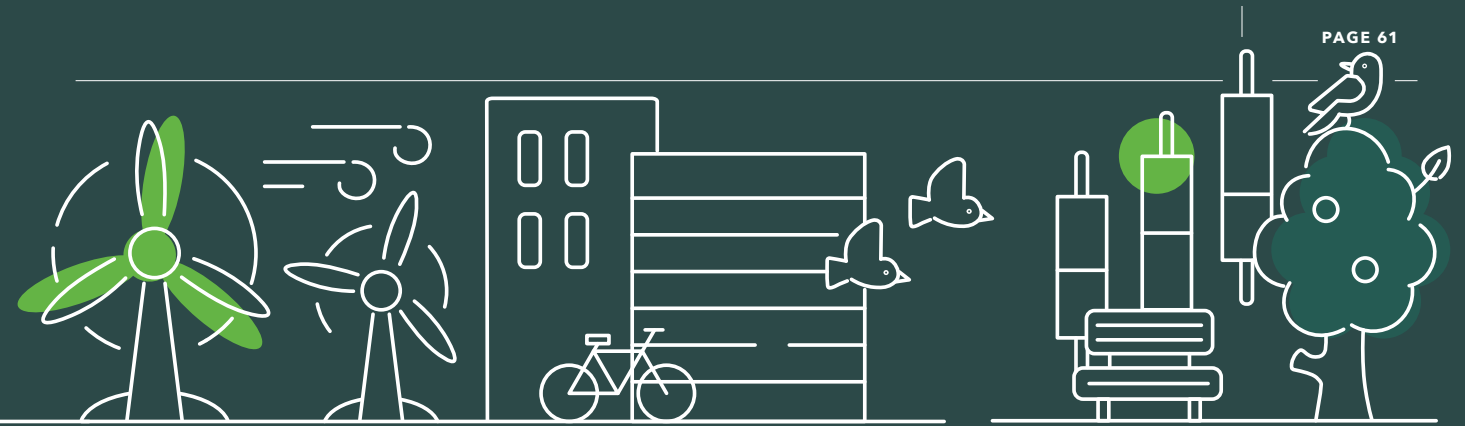
Given the success of our Beige Book experiment, we are exploring further areas where we can apply Bayesian techniques to aid our investment decision making. We can only echo the sentiments of the cult classic *Bayesian Believer*⁹ (to the tune of *I'm a Believer* by The Monkees). ●

"Then I saw Tom Bayes,
now I'm a believer,
not a trace of doubt
in my mind."

Guest contributor Duncan Austin has had a 25 year career in environmental economics and sustainable investing, spanning positions in non-profit and for-profit organisations. Most recently, he was partner at a leading sustainable investment firm for 14 years. Since 2019, he has been an independent researcher and writer on sustainability.

Gone with the win-win?





ESG INVESTING BEGAN WITH A TWO-PRONGED PROMISE: THE OPPORTUNITY TO SOLVE THE WORLD'S MOST PRESSING CHALLENGES; AND MARKET-BEATING RETURNS FOR ITS BACKERS.

But progress on tackling the challenges has been painfully slow, and returns are being questioned. Meanwhile, environmental tipping points are approaching alarmingly fast. A massive change in perceptions is needed to take into account the true environmental and social costs of businesses' operations. Perhaps sustainability is less a market opportunity and much more a moral challenge.



DUNCAN AUSTIN

Guest contributor

ESG IS SUDDENLY EVERYWHERE, THOUGH BECOMING MORE CONFUSING AND CONTENTIOUS BY THE DAY.

Environmental, social and governance factors were amalgamated into a single acronym in 2004 as part of a UN-sponsored initiative to persuade us that such issues were not merely of discretionary interest to socially responsible investors but increasingly central to proficient asset management. ESG factors should no longer be thought of as costly distractions but rather as drivers of performance.

Hence, ESG was a crystallisation of the notion that sustainability can be a win-win for investors – simultaneously good for profit and planet. The hope was that sustainability-aware markets would direct capital towards solution technologies and business models for which demand and profitability would increase, triggering a virtuous circle in which ESG investors would benefit by resolving social and ecological problems.

The idea has certainly gained traction. The Global Sustainable Investment Alliance estimates that global ESG assets now account for one third of total assets under management, while ESG-themed ETFs – a newer development – have grown tenfold since 2017.

Inevitably, with this growth have come challenges. Some financial institutions have exaggerated their sustainability claims – so-called greenwashing – leading regulators to levy fines and formulate an official taxonomy of environmentally sustainable actions. From another direction, anti-ESG or anti-woke actors question the premise that businesses should care about such factors and have persuaded several US states to sell or avoid ESG investments.

Yet much mainstream commentary ignores the key issue that motivated ESG pioneers: is ESG investing making the world more sustainable?

On this critical matter, doubts are rising, for two major reasons. First, the scientific community is warning that global ecological challenges may be greater and more imminent than first understood. Second, after 20 years, the win-win narrative has less to show for its efforts than hoped.

This article reviews each dynamic in turn.

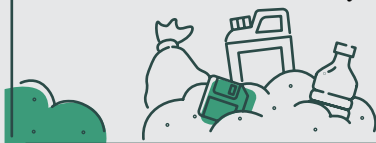
PHYSICAL TIPPING POINTS LOOM

Ecological challenges are fundamentally physical not economic problems, and while scientists caution against reducing interconnected ecological challenges to climate change alone, climate change remains the overarching ecological risk and exemplifies the physical aspect of such threats.

The global average temperature is now 1.1°C above pre-industrial levels and continues to rise towards irreversible tipping points, such as the loss of the Greenland and West Antarctic ice sheets, which scientists now believe may be reached at 1.5°C of warming (Figure 1).

The recognition that critical tipping points are so close is a major, if underappreciated, development of climate research. In the early 2000s – when win-win thinking took hold – the Intergovernmental Panel on Climate Change believed tipping points lay at about 5°C of warming, suggesting considerable time and ecological headroom to make a transition.¹ That view has decisively changed. A September 2022 review described 16 major climate tipping points, six of which are likely to be triggered within the Paris Agreement range of 1.5°C to 2°C of warming.²

The risk tipping points present is not only that they are irreversible on human timescales but also that breaching first thresholds will accelerate warming and so raise the probability of crossing subsequent thresholds to initiate a self-reinforcing tipping cascade.

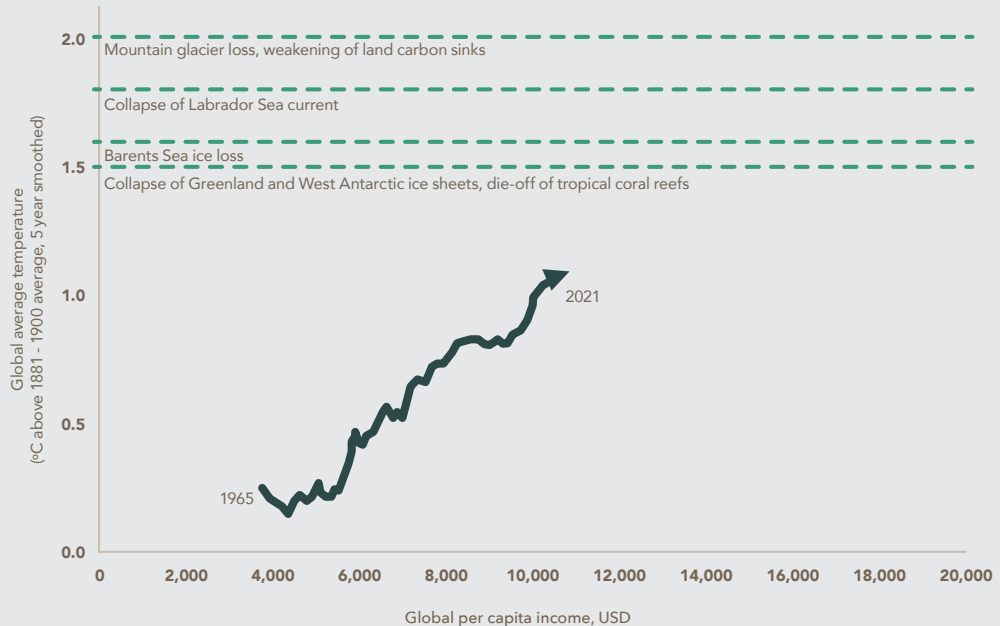


¹ Lenton et al (2019), Climate tipping points – too risky to bet against

² Armstrong McKay et al (2022), Exceeding 1.5°C global warming could trigger multiple climate tipping points

Figure 1

GLOBAL AVERAGE TEMPERATURE AND SELECTED CLIMATE TIPPING POINTS



DIVERGING WORLDVIEWS

The trajectory plotted in Figure 1 corresponds to the first part of what economists call an environmental Kuznets curve (EKC), for which the left of Figure 2 (next page) is the textbook form. EKCs outline the relationship between economic growth (per capita income) and environmental damage (eg global temperature as a proxy for climate change). The curve is named after its resemblance to the Kuznets curve originally proposed by economist Simon Kuznets, who hypothesised that market forces might initially increase economic inequality before decreasing it, in an inverted U shape.

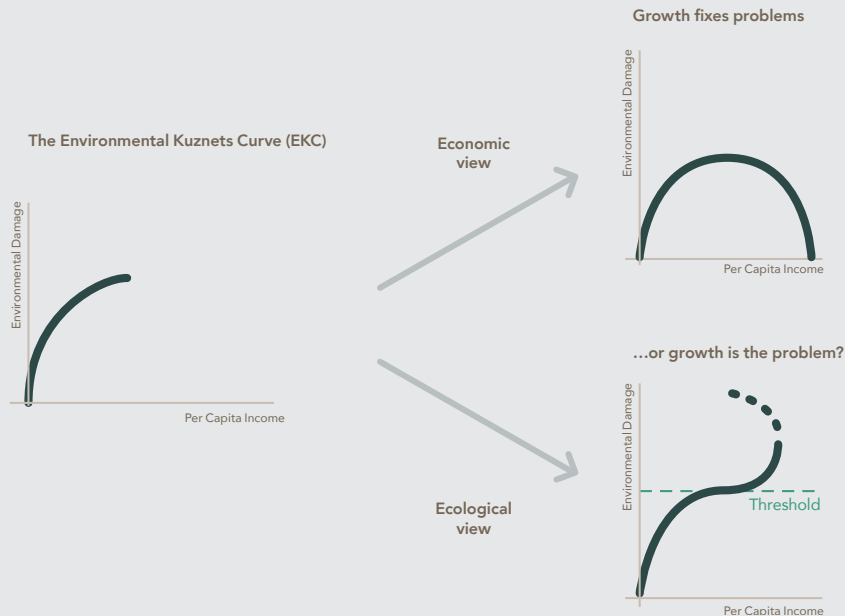
The key question is what shape will the EKC for climate change take after its rise to date? Here we arrive at a profound difference in worldview that divides individuals, professions and cultures and is in many respects the crux of the sustainability debate.

The economic perspective is that the EKC will mimic the original Kuznets curve for inequality and will amenably turn back down with economic growth as wealth and innovation remedy initial environmental harms. For example, London used to be smog-ridden in the 1950s but now is not. Hence, the EKC is a graphical depiction of economics' faith that growth can eventually remedy all ills. In contrast, those working in the natural world tend to have an ecological worldview. While this accepts the EKC may sometimes bend down, it also recognises that complex systems – from the smallest of organisms up to large civilisations and ecosystems – are susceptible to failure and collapse, often in tipping cascade fashion.

For the ecologist, growth is not unambiguously positive but depends on its complexion. Growth of certain forms or in certain directions can lead complex systems

Figure 2

TWO VIEWS ON THE ENVIRONMENTAL KUZNETS CURVE



over critical thresholds. In contrast to the economist's confidence that the EKC will always turn down in time, the ecologist perceives the EKC may also sometimes be backward-bending. Beyond a threshold, environmental damage may accelerate and eventually undermine economic activity.

As Figure 2 highlights, the fundamental difference is between those who perceive limits to economic growth and those who do not. The addition of the dotted horizontal line changes everything. It transforms an open-ended situation in which it is acceptable just to keep making forward progress into an adaptive challenge with deadlines. Readers might reflect not just on which view best fits their intuition, but also why they may have greater inclination towards one or the other. Based on what formal or informal influences?

WE ARE THE EXPERIMENT

To settle such a consequential divergence of views, we would ideally conduct experiments and collect evidence. Unfortunately, for climate change and other global challenges, we are the experiment.

When you cannot step out of an experimental frame and there is some risk the experiment will fail, it is best to proceed very cautiously. This is why sustainability researchers formulated a precautionary principle in the 1980s. Despite rising ecological challenges, usage of the term precautionary principle peaked in 2002 and has declined markedly since – quite possibly a casualty of the appealing and reassuring win-win narrative that emerged at the time (Figure 3).

THAT MUCH SUSTAINABILITY?

Scientists’ growing concerns about the proximity of thresholds have surfaced in the boardroom in the shock of Net Zero, with its demand that global greenhouse gas (GHG) emissions reduce sharply in very short order. The notion has been a rude awakening for many businesses conditioned by ESG practices to view sustainability as being a bit more sustainable than the last fiscal period rather than being, as ecologists have always interpreted it, sustainable enough before it is too late. Possibly, there have been some uncomfortable silences in boardrooms as the coin has dropped. ‘Oh, they mean that much sustainability...’

Unfortunately, that much sustainability raises difficult questions about the sufficiency of win-win strategies – because the sustainability win now looks much more demanding than first thought.

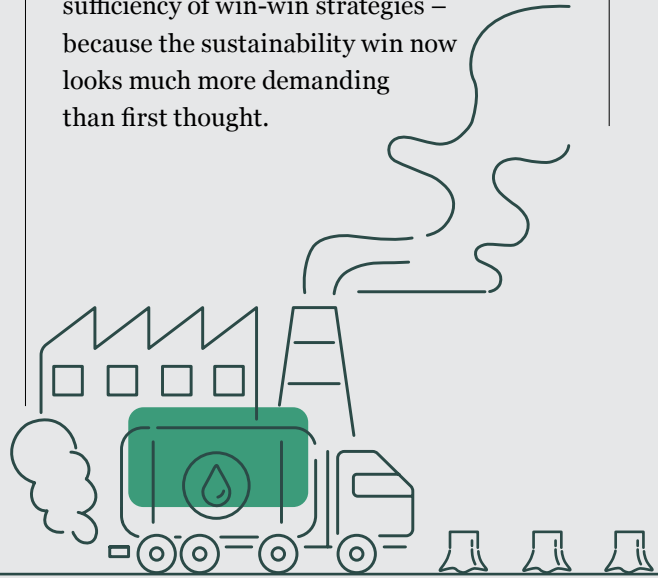
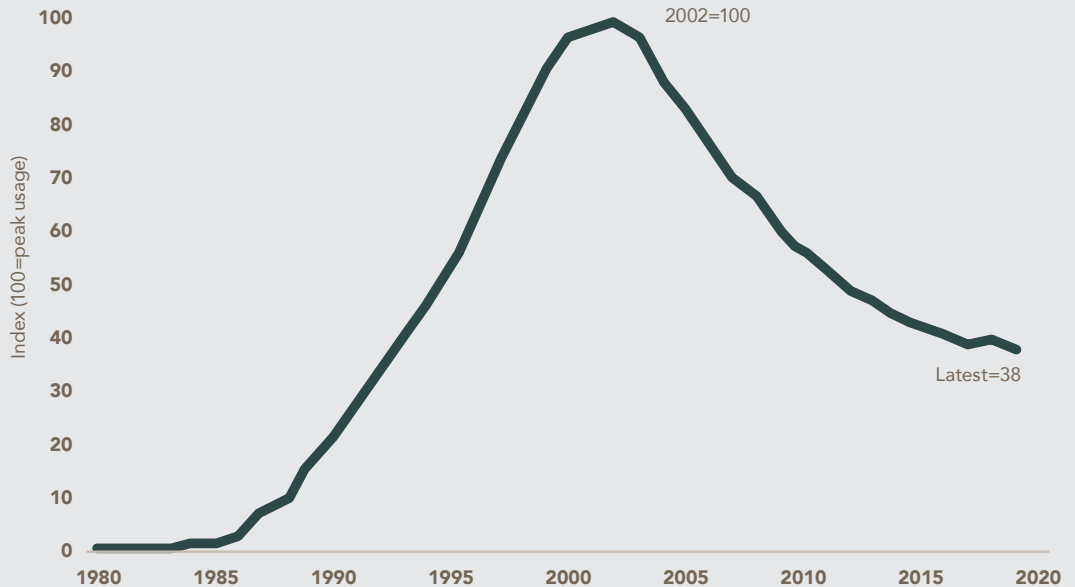


Figure 3
FREQUENCY OF USAGE OF THE TERM PRECAUTIONARY PRINCIPLE



MISSING THE PHYSICS FOR THE FINANCE

The second major development is a growing recognition of the insufficiency of voluntary win-win dynamics.

Today, GHG emissions are nearly 50% higher than they were in 2000 – and still rising. In February 2022, scientists warned we have likely exceeded safe use of plastics and chemicals, meaning we have now transgressed six out of nine planetary boundaries.³

Certainly, these trajectories might be worse still without ESG-prompted market efforts. It is also probable that some benefits of ESG investing will accrue with a lag. But the inescapable conclusion is that the strategies humanity is currently deploying to become sustainable do not appear to be driving enough change fast enough.

OUR ECONOMY IS NOT FULLY COSTED

One key reason market societies are struggling to solve ecological problems is that financial statements do not yet reflect the physical reality of which we are newly aware. Market societies overwhelmingly deploy their human and physical resources as financial statements direct. This is Adam Smith's invisible hand working efficiently in practice. Yet, in following those signals, we currently miss the physics for the finance, because financial statements are not fully costed.

For example, less than 4% of global carbon emissions are priced at levels consistent with the Paris Agreement's temperature goals.⁴ Hence, hardly any of today's market transactions reflect their full contribution to climate change. The same neglect is repeated to varying degrees for other environmental and social problems.

The sustainability challenge in a nutshell: our generally accepted financial statements are not fully costed, yet a comprehensive thicket of incentives, duties and market practices assumes they are. ESG-style efforts to steer markets to be more sustainable are being overpowered by the systemic neglect of costs. For all the sincere aspirations to make capitalism sustainable, fair, inclusive and more, the system much of the world currently lives under is externality-denying capitalism.

ECONOMICS' FATEFUL DISMISSAL OF EXTERNALITIES

Markets' ascendancy to their current primacy of social coordination, boosted by neoliberalism from the 1970s, owes much to economics' claims of the superiority of market outcomes. Yet these claims rest on mid-twentieth century economic theories that, largely due to the mathematical limitations of the era, both modelled markets as complete (in the sense that market values exist for all human preferences) and assumed growth was independent of natural resources.

“ One key reason market societies are struggling to solve ecological problems is that financial statements do not yet reflect the physical reality of which we are newly aware.”

3 Persson, L et al (2022), Outside the safe operating space of the planetary boundary for novel entities

4 World Bank (2022), State and trends of carbon pricing

Figure 4

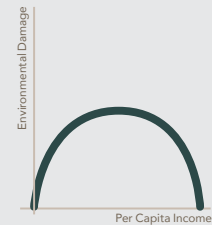
EXTERNALITIES AND THE ENVIRONMENTAL KUZNETS CURVE

Scenario A: If financial statements are well costed and externalities are small...

...the EKC has a good chance of bending down

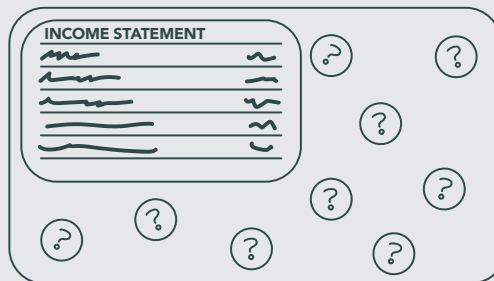


Growth fixes problems

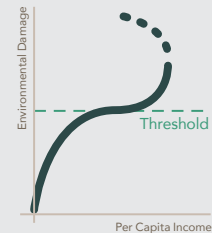


Scenario B: If financial statements are not well costed and externalities are large...

...the EKC may prove backward-bending



...or growth is the problem?



While economists understood their models were abstractions, their conclusions were so agreeable that the temptation inevitably took hold to play up the autonomous benefits of markets. This required playing down the externalities that confounded such amenable findings. Hence, externalities, flagged as important by economist Arthur Pigou as early as 1910, were marginalised as negligible residuals to the centrepiece of an efficient economy.

The shock for economics today is that externalities can no longer be dismissed as marginal when they are fast becoming the main event. In what increasingly appears a fateful accident of timing, markets were elevated to the primacy of human decision-making, based on their appealing properties when complete, just as major ecological externalities heaved into view to scotch that assumption.

Consequently, we can tell two contrasting stories about markets' ability to tackle

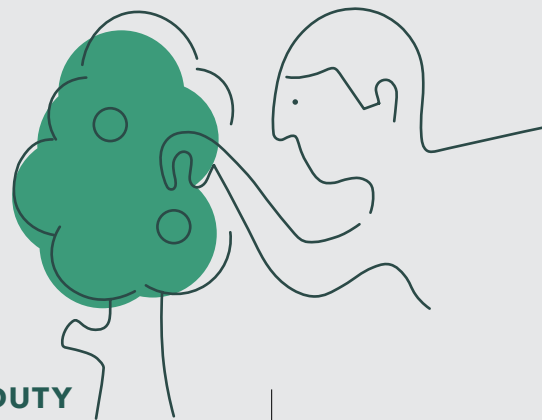
limits-constituted problems based on the degree to which external costs are reflected in financial statements (Figure 4).

In scenario A, where financial statements are assumed to be well costed and externalities small, market-led solutions have a high chance of solving environmental problems, because economic growth is externality- and threshold-aware. Market signals should therefore be able to drive the requisite technological substitution and behaviour change in timely fashion.

In contrast, in scenario B, where income statements are not well costed and externalities are large, market-led solutions are likely to fail because economic growth is constituted in a way that is blind to its consequences and so may generate damage faster than solutions can be implemented, with a risk of transgressing irreversible thresholds.

This is the essence of the reservation many natural scientists intuitively harbour

“ We are discovering that Adam Smith’s invisible hand is connected to an unmentionable foot.”



about economic growth being a solution for climate change – the wealth generation that will supposedly solve problems may create more damage along the way than we can subsequently remedy. How wealthy we were all going to be becomes a moot point.

INVISIBLE HAND, UNMENTIONABLE FOOT

A metaphor may help fix the intuition. Essentially, we are discovering that Adam Smith’s invisible hand is connected to an unmentionable foot. The hand represents the market’s autonomous allocative and innovative dynamics, which are real and remarkable and have been much celebrated. But the foot represents the real costs generated by market activity which are not recognised and land on other people and other places, sometimes with a lag.

Unfortunately, the hand and the foot are engaged in a dynamic struggle. A market system’s overall benefit for human wellbeing depends on the relative strength of the hand’s (internal and recorded) value creation and the foot’s (external, largely unrecorded) cost-shifting. To believe that economic growth can solve all social and environmental problems is to trust that the invisible hand can always repair what the unmentionable foot damages – and do so before irreversible or intolerable harms occur.

A STEWARDING DUTY

For all the ESG headlines, the foremost question is whether the win-win dynamic, which is ESG’s founding ethos, is working as quickly as we need. And, if not, what is humanity’s plan B for tackling still-mounting environmental challenges?

The sustainability crisis presents investors not simply with difficult investment decisions but with the transcendent question of what they might do to help tackle problems, given that private sector actors wield considerable influence in a market society.

Above all, investors might ask how well we are stewarding our market system.

There are many reasons to like markets, given their allocative and innovative possibilities. But, for real-world markets to live up to their textbook properties, market signals must be continuously trued up to our ever-evolving understanding of reality. Hence, a fundamental stewarding duty of a market-favouring society must be to continually internalise externalities. It is the fate of current generations to have identified large and growing externalities on our watch.

Truing up markets can be achieved in various ways – pricing, permitting or other regulatory means – which make real scarcities known to markets. With less than 4% of global carbon adequately priced, Mr Market has no real inkling of the climate crisis because it has not been communicated

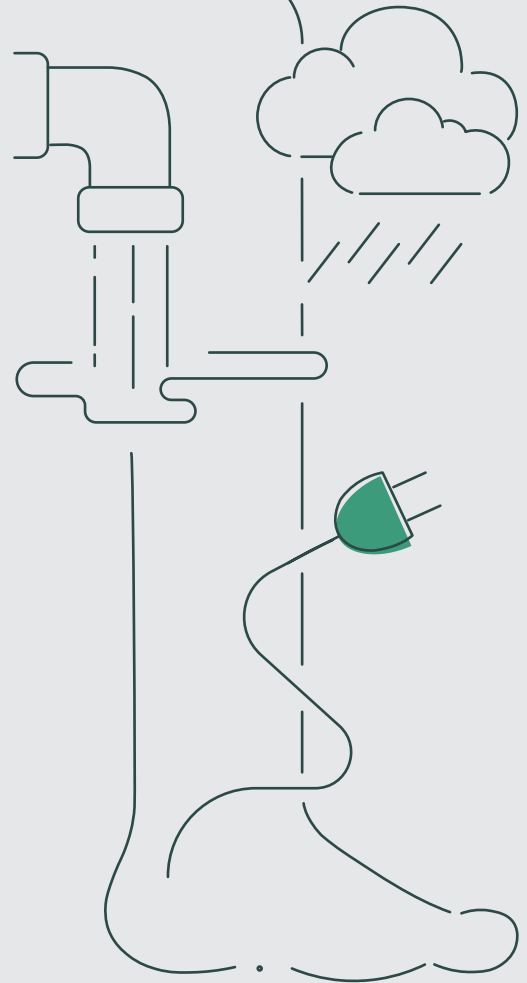
to him in the language he understands. The hand doesn't know what the foot is doing. It might help to inform Mr Market by pricing carbon so he comes to know of the problem. At which point he may prove to be a formidable ally. In this effort, private sector actors, as key market stewards, could exert considerable influence.

A MORAL CHALLENGE

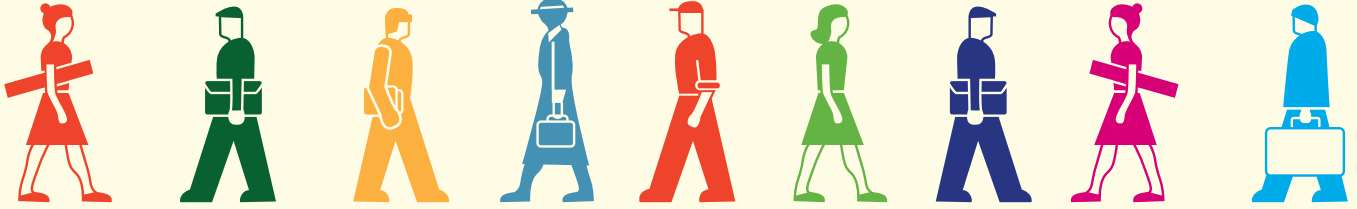
We might rue our misfortune that such challenges have arisen and wish inconvenient consequences were not so. Or we might reflect, as the longest-lived and most prosperous generations ever to have lived, that we face a challenge commensurate with our good fortune and inherited capacities.

A stewarding duty to true up market signals to a new sense of consequences is simply one manifestation of the broader challenge modern culture faces in learning to accept both welcome and unwelcome revelations of scientific advances. Science both giveth in the form of benign discoveries and new technologies and taketh away in the surfacing of inconvenient truths. Unfortunately, it is a package deal. Part of the maturing of a scientific culture involves developing the individual and collective capacity to treat welcome and unwelcome news just the same.

Twenty years after ESG's crystallisation of the hope there might be an agreeable win-win, sustainability now looks much more like a moral obligation than an appealing market opportunity – less win-win, more must do. Yet, if we can rise to the moral challenge of internalising externalities today, authentically sustainable market opportunities will surely be abundant in the future. ●



“ Science both giveth in the form of benign discoveries and new technologies and taketh away in the surfacing of inconvenient truths.”



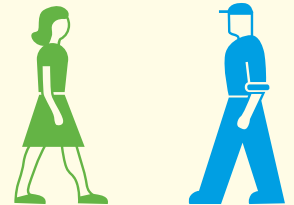
HAPPY,



AND SMART



PEOPLE



NEARLY ALL ADVANCED ECONOMIES FACE A COMMON FOE: LOW AND FALLING PRODUCTIVITY. AND THAT IS A PROBLEM.

As Paul Krugman put it in 1994's *The Age of Diminishing Expectations*, "A country's ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker." To solve this problem, companies need to innovate, and many have turned to technological solutions such as artificial intelligence (AI) and machine-based learning. But innovation still stems from the human brain, and the best companies understand that attracting, retaining and developing an engaged, creative and knowledgeable workforce is the key to productivity gains.



KEVIN PAUL

Responsible Investment Director



ELEANOR MORIARTY

Responsible Investment Associate

WE SEE HUMAN CAPITAL – EMPLOYEES' SKILLS, KNOWLEDGE AND EXPERIENCE – AS CRITICAL TO COMPANIES' PERFORMANCE.

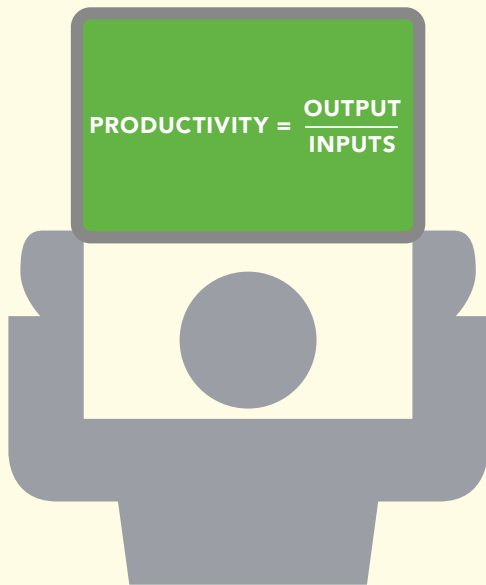
It follows that a sound grasp of human capital trends can yield insights into companies' potential for value creation. This shows how responsible investment frameworks can enhance traditional fundamental analysis. You cannot fully understand a company without considering operational aspects that are often seen as ESG factors and thus secondary to the fundamentals.

In recent times, strikes and skills gaps have plagued many industries, jeopardising the corporate strategies that underpin companies' market valuations. These issues stem from an array of social and governance failings, some due to companies' own actions, others exogenous.

For investors, identifying the risks and opportunities the management of human capital presents could be the difference between backing a winner and picking a dud. Companies with employees who are well managed, incentivised and trained are the most likely to innovate, grow and produce long-term value for all stakeholders – not least investors.

WHAT IS PRODUCTIVITY?

Productivity is the relationship between inputs and output – in other words, how efficiently a business turns raw materials, capital etc into goods or services.



Inputs are a function of a number of variables. Specifically, two are in scope for the innovation argument: human capital and labour bottlenecks.

Human capital is a broad term for the knowledge and skills possessed by individuals in the labour force. It captures more qualitative attributes than commonly used measures of activity such as the number of hours worked. By integrating human capital into their productivity frameworks, analysts can account for the value added by employees' learning, development and experience.

Labour bottlenecks can prevent companies from accessing sufficient human capital. They are caused by both acute and structural issues. Demographics shape the labour force – countries grow richer, their populations become more educated,

average fertility declines and life expectancy rises. As populations age, the proportion of retirees increases with each generation, leaving a smaller pool of workers for companies to recruit from. Long-term illness, 'quiet quitting' and employees opting for early retirement since the pandemic have all contributed to a tighter labour market.

Throughout 2022, we saw evidence of these bottlenecks in our meetings with companies, as many management teams said a shortage of labour supply was impeding growth.

KNOWLEDGE IS POWER

Companies need to find ways around these bottlenecks. Despite phenomenal advances in AI, employees are still the main drivers of innovation. So the challenge for companies is to nourish and cultivate their employees' joint stock of knowledge – their human capital.

Companies can enhance this knowledge base by creating an environment in which employees are encouraged to take risks. Companies must be open to trial and error, specialisation and cross-pollination.

This means fostering a culture of aspiration, humility and transparency. To capitalise on such a culture, companies need to attract, integrate, develop and retain individuals who are engaged, innovative and comfortable with uncertainty.

YOU CAN'T MONITOR WHAT YOU CAN'T MEASURE

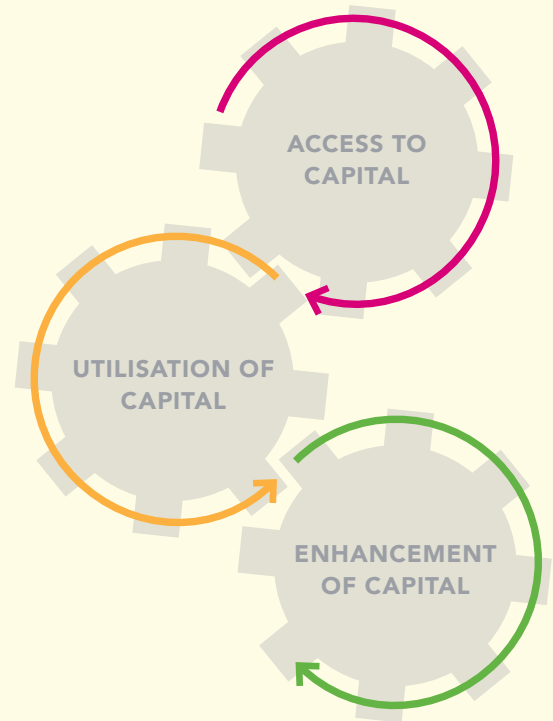
So how can investors assess a company's success in managing its human capital?

Unfortunately, companies' disclosures on human capital management remain primitive. That is frustrating for those who see "the individual as the primary actor in knowledge creation and the principal repository of knowledge."¹

If human capital performance is a key driver of the financial outcomes in corporate accounting statements, surely analysts should put just as much effort into evaluating companies' stock and flows of knowledge as they currently put into tracking changes in financial metrics.

If we take knowledge creation as the crucial measure, our three key areas of analysis are: access to capital; utilisation of capital; and enhancement of capital. (This applies to all forms of capital, whether financial, manufactured, intellectual, natural, social or human.)

A well-positioned company can readily access the capital it needs at a favourable cost, use that capital productively today and enhance it to increase the chances of creating and capturing value in the future.



Strength in these three areas is likely to underpin any sustainable competitive advantage over the company's peers, especially during times of volatility and scarcity.

To track the link between human capital productivity and a company's profits and value, we need clarity on its access to and its use and enhancement of human capital. A better grasp of a company's labour market power will help us to assess how boosting workers' productivity could lead to a higher equity value.

¹ Grant (1996), *Toward a knowledge-based theory of the firm*



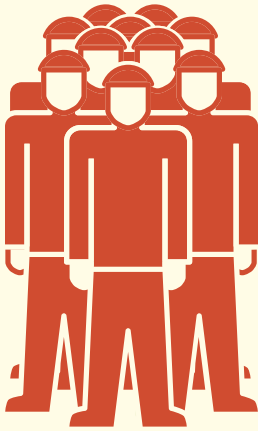
A PRACTICAL FRAMEWORK

In equity analysis, qualitative factors are notoriously hard to evaluate. But some factors could be easily measured and compared if only

companies reported key indicators.

We have built a sample framework to help with this kind of analysis.

| | EXAMPLE QUESTIONS | EXAMPLE INDICATORS |
|---------------------------------|--|--|
| ACCESS TO HUMAN CAPITAL | <ul style="list-style-type: none"> ? Is the company able to recruit employees with the required skills, especially in tight markets? ? How strong is the employer's brand? ? Is the company investing in the employer's brand to secure a talent pipeline, eg through school partnerships? | <ul style="list-style-type: none"> <input type="checkbox"/> Applicants per opening <input type="checkbox"/> Number of days job openings are left unfilled <input type="checkbox"/> Employer's brand strength: independent assessment <input type="checkbox"/> Internal skills gaps <input type="checkbox"/> Voluntary employee turnover |
| UTILISATION OF HUMAN CAPITAL | <ul style="list-style-type: none"> ? How does its human capital productivity compare with peers'? ? How strong is employee engagement? ? Are there indications of decentralised, proactive innovation – ie customer-oriented ideas emerging from a broad range of employees? | <ul style="list-style-type: none"> <input type="checkbox"/> Sales per employee, value added per employee <input type="checkbox"/> Employee engagement score <input type="checkbox"/> Breadth of innovation: number of workers submitting fresh ideas that shape new products and services |
| ENHANCEMENT OF HUMAN CAPITAL | <ul style="list-style-type: none"> ? Is the company investing in training to cultivate critical skills? ? Are these skills generic or firm-specific? ? How does this affect employee bargaining power? ? Are these investments boosting human capital productivity, retention, engagement, innovation, adaptability? | <ul style="list-style-type: none"> <input type="checkbox"/> Training outlay (hours per employee or spend per employee) <input type="checkbox"/> Return on training indicators <ul style="list-style-type: none"> – change in gross margins/training spend – change in patent filings/training spend – change in voluntary employee turnover/training spend |



“The companies that are best at attracting, using and enhancing human capital will be best placed to create and capture economic value.”

By using an analytical framework like this, it should be possible to identify connections between a company’s competitive position, its management of human capital and its ability to generate profits.

PRESTIGE AND ITS PRIVILEGE

Imagine an industry where human capital productivity varies widely from company to company, owing to accumulated differences in the quality of employees and firms’ assets or managerial processes.

Within this industry, Company A has created a working environment which helps its employees to be more productive than its competitors. This gives it the prestige of a best-in-class operator, making it more attractive to potential employees. At the same time, greater productivity leads to stronger profits, which allows Company A to pay its workers higher wages than are on offer at its peers.

Crucially, the wages – though higher in absolute terms – can account for a lower proportion of Company A’s profits, if this prestige affords the company bargaining power over labour. This difference between workers’ marginal output and absolute wage is known as a wage markdown. Assuming

Company A sets this wage markdown just right (a tricky task), workers can be kept happy even as profits grow, thus creating a virtuous circle.

THE PRODUCTIVITY PREMIUM

Investors naturally seek out innovators. And productivity demands innovation. To identify the companies with the highest innovation potential, we need to understand how they manage human capital.

Despite the rise of the machine, knowledge creation still requires the human touch. The companies that are best at attracting, using and enhancing human capital will be best placed to create and capture economic value. They will develop the new knowledge required to solve problems efficiently and make the greatest gains in productivity.

In stock level analysis, it may well pay to identify the leaders in human capital management and engage with laggards, whilst continuing to explore the productivity-innovation nexus. ●

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UNDERESTIMATE SEQUENCING RISK AT YOUR PERIL.

You can have two \$1 million portfolios with the same regular withdrawals and similar annualised returns for the investment period as a whole. But the sequence of those returns - when the gains and losses occur - can mean the difference between a final value of \$0 and doubling your money. So how can investors mitigate this major threat to long-term wealth?



JOSEPH BARKER
Investment Manager

FOR A PORTFOLIO WITH CASH FLOWS, SEQUENCING RISK IS THE POTENTIAL IMPACT ON THE PORTFOLIO'S FINAL VALUE FROM THE ORDER IN WHICH RETURNS ARE ACHIEVED – that is, whether performance is stronger at the start or the end of the investment. This is true for any investment that involves cash flows, whether withdrawals from the portfolio or additions to it.

When a regular income is drawn, the returns at the start of the investment period matter far more than the returns at the end. If the returns early on are weak, any withdrawal

represents a higher percentage of the now lower portfolio value. That makes it harder for the portfolio to generate the return needed to maintain future withdrawals.

Suppose 1,237 portfolios of \$1 million were invested in the S&P 500 for 20 years. Each one starts in a different month between December 1899 and December 2002, with the first investing from December 1899 to December 1919, the second from January 1900 to January 1920 and the final portfolio investing from December 2002 to December 2022. The annualised return achieved by these portfolios range between 1.6% and 18.2%.

DOUBLE OR QUITS?

This variation in performance given different starting points is well understood; it is simply investment risk. What is less well understood

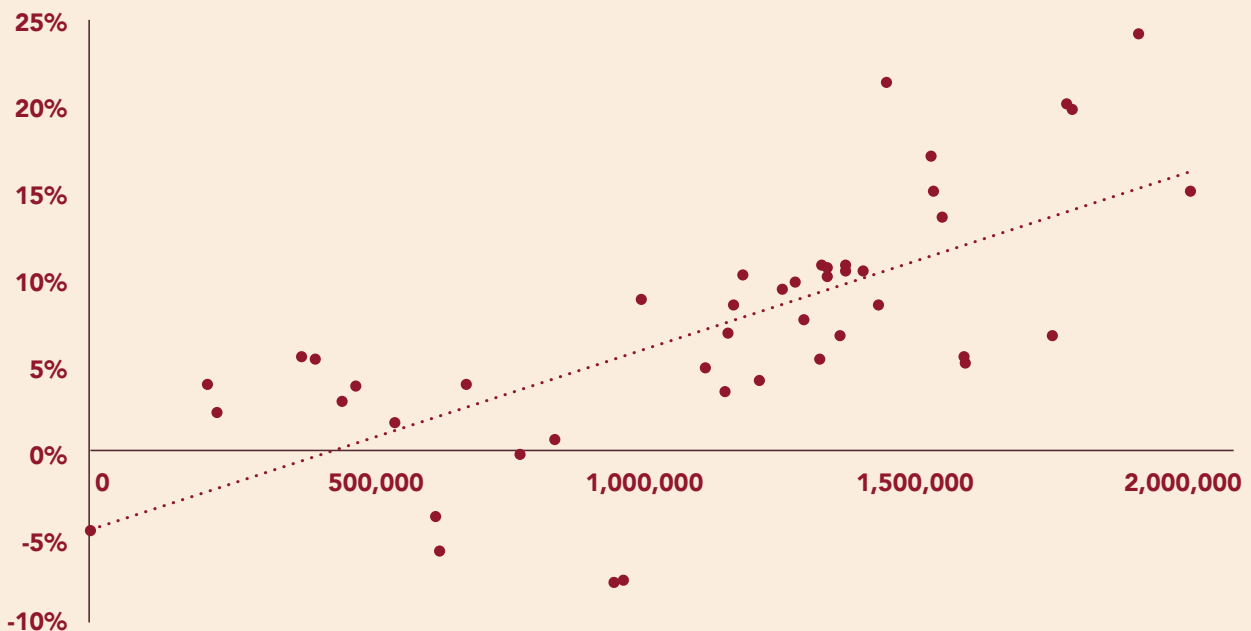
is the vastly different outcomes for portfolios which achieve the same overall percentage return, but pay regular cash flows.

Of these 1,237 sample portfolios, 45 had annualised returns in a narrow range between 6.9% and 7.1%. Taking this sample set and assuming each withdrew \$65,000 a year (6.5%) in monthly instalments over the 20 years, the final portfolio values range from \$0 to over \$2 million. As many as a third of these investors end up with less than the \$1 million they started with.

Remember: each of the 45 investors has an almost identical overall return, which is greater than their withdrawal requirement. Nevertheless, their experience differs wildly, with some losing their whole investment while others double their money. How can this be?

Figure 1

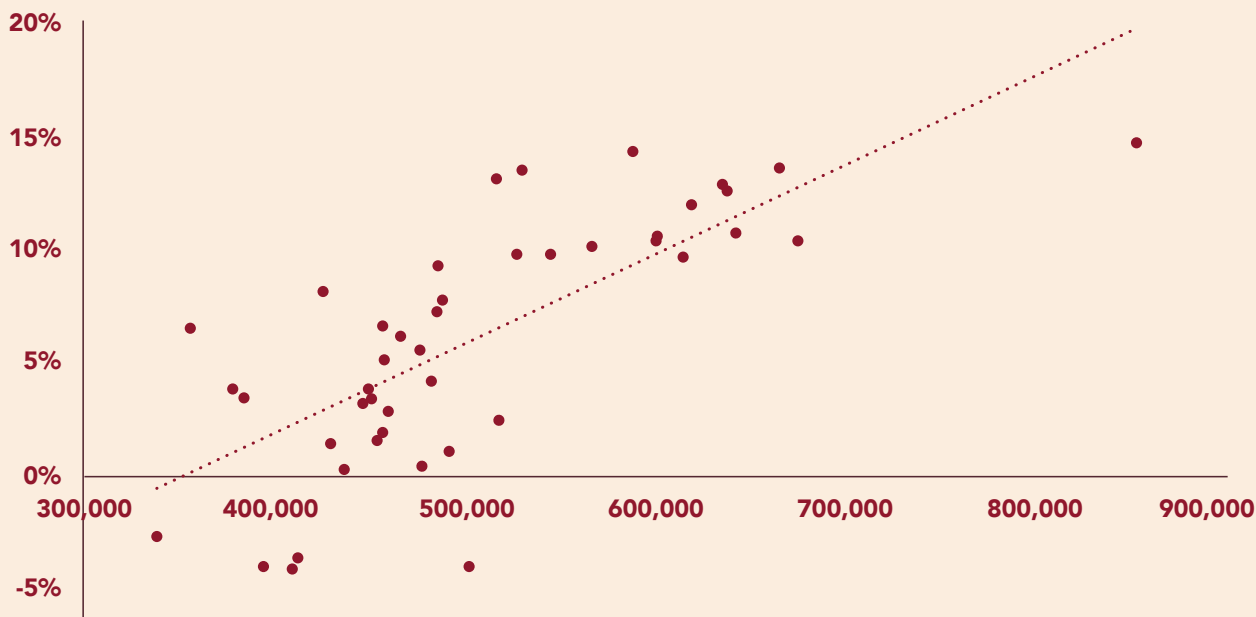
FINAL VALUES VERSUS RETURNS IN THE INITIAL SEVEN YEARS FOR PORTFOLIOS WITH NEAR IDENTICAL 20 YEAR RETURNS



Source: Global Financial Data – S&P 500 total return, 45 portfolios starting with \$1m invested for 20 years whilst withdrawing \$65,000 per year in monthly instalments

Figure 2

FINAL VALUES VERSUS ANNUALISED RETURNS IN THE LAST SEVEN YEARS FOR PORTFOLIOS WITH NEAR IDENTICAL 20 YEAR RETURNS



Source: Global Financial Data – S&P 500 total return, 45 portfolios starting with \$1,000 invested for 20 years whilst adding \$1,000 per month

Figure 1 plots the final value of each of the sample portfolios against the annualised return achieved in the first seven years. As we would expect, portfolios with strong early returns – the dots towards the top of the chart – generally cluster towards the right and have higher final values.

By contrast, portfolios with weak early returns are clustered towards the bottom left of the chart, signifying low final values and, in one case, a complete loss of wealth. This shows that strong performance in the initial period is crucial to achieving a good final outcome.

ACCUMULATING PROBLEMS

What is even less well understood is that sequencing risk is a problem for portfolios not just in drawdown, but also in the accumulation phase.

Let's take the same sample set of portfolios again, but this time starting with \$1,000 and investing \$1,000 per month. Again, the final values across portfolios with almost identical annualised performance differs vastly, ranging from \$339,588 to \$852,389. In the accumulation phase, the portfolio is generally largest towards the end of the holding period, so performance then matters more than at the start.

Figure 2 plots the final value of each of the sample set against the annualised return in the last seven of the 20 years. Again, it shows a distinct correlation between portfolio value and returns towards the end of the investment horizon, despite near identical annualised performance over the period as a whole.

So, whenever cash flows are involved, the dollar return achieved is affected dramatically by the sequence of returns, not just by the returns themselves. A good annualised return is not enough to guarantee a good long-term result.

MITIGATING SEQUENCING RISK

In both of these examples, the results vary based on when the good and bad periods of return occur. The only way to reduce sequencing risk is to ensure the portfolio avoids any large drawdown when the portfolio's value is highest. But this is far easier said than done.

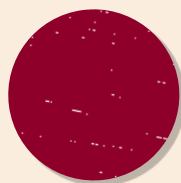
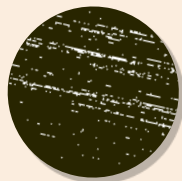
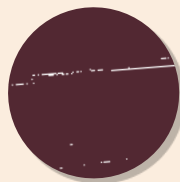
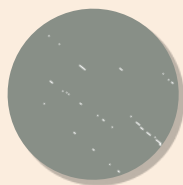
Most pension plans try to mitigate this risk by using a sliding asset allocation. In the early years of a member's employment, the portfolio is geared towards investments with higher risk and expected returns.

As the member approaches retirement and the portfolio gains in value, investment risk is decreased on a sliding scale, typically by reducing the portfolio's exposure to equities,

“A good annualised return is not enough to guarantee a good long-term result.”

in favour of bonds. Whilst this lowers the expected return, it should also reduce the exposure to drawdowns – barring a meltdown in bonds, such as we saw last year.

GMO has produced a white paper which takes this approach a step further.¹ As well as reducing exposure to equities with age, it suggests varying the allocation depending on equity valuations. The paper argues that buying equities when they are undervalued can improve average final portfolio values. However, many active multi-asset managers already flex their allocation to equities as valuations change, so this solution will often be already incorporated into portfolios. Besides, it improves final values mainly by increasing overall portfolio performance.



“For a portfolio with significant cash flow requirements, the order in which returns are achieved matters a great deal.”

For us, the more important question is how to mitigate sequencing risk across portfolios with near identical returns. One way would be an absolute return approach, which aims to avoid large drawdowns altogether and generate consistent positive returns over a specified time. After all, the sequence of returns does not matter if the same return is achieved in every period.

ALL IN ORDER

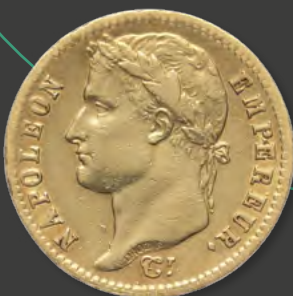
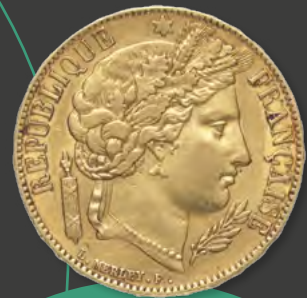
For a portfolio with significant cash flow requirements, the order in which returns are achieved matters a great deal. Percentage returns tell only part of the story, and we believe the potential impact of sequencing risk should be given careful consideration before making any investment. ●

All change for small change



"Nothing so evil as money ever grew to be current among men. This lays cities low, this drives men from their homes, this trains and warps honest souls till they set themselves to works of shame; this still teaches folk to practise villainies, and to know every godless deed."

King Creon decriing the introduction of physical currency in Sophocles' tragedy *Antigone*, first performed in 441 BC.



ANNABEL PATERSON Investment Associate



FOR THE MYTHOLOGICAL KING CREON OF THEBES, MONEY WAS A SOURCE OF GREAT ANGUISH – COINS WERE COLD, HARD SYMBOLS OF MORAL AND SOCIETAL DECLINE. BUT, FOR HISTORIANS, THEY ARE A TREASURE TROVE OF DISCOVERY.

Numismatics (the study of coins) can illuminate history, offering a unique record of linguistic, technological and political change. Historians think of coins not just as a medium of exchange but also as a medium of communication. What do the images carved into bronze, silver and gold reveal about the state of a nation? Are coins political tools in themselves? At a moment of historic change to the British pound entailed by the accession of King Charles III, here we look at coins from the Ruffer collection and ask what we can learn from the heads of heads of state.



THE ROYAL TRADITION

The earliest coins can be traced to Asia Minor in the seventh century BC. Many of these coins from Lydia featured a roaring lion – the king of the jungle – thus beginning the enduring tradition of depicting royalty on coinage.

The first person to feature on coinage is thought to be Tissaphernes, a Persian nobleman and satrap of Lydia from the fifth and fourth centuries BC, seen here on the left. Coins were often the only visual depiction subjects had of their leader. Carved portraits legitimised, actualised and deified rulers so that currency soon became a tool to lay claim over disputed territories. Coins were as much instruments of propaganda as they were tokens of trade.



RULE BRITANNIA

The currency portraits with the greatest geographical reach have all been of British monarchs.

International currencies reveal the breadth of British colonial power in the nineteenth and twentieth centuries. This ten cent coin from Hong Kong features the head of King Edward VII, who reigned from 1901 until 1910.

Like his father, King George V held many imperial titles during his reign, including Emperor of the Straits Settlements – a former crown colony near the Malayan peninsula comprising Penang, Singapore, Malacca and Labuan. This five cent piece (of the Straits dollar) was minted in 1935.

He is depicted here, as Emperor of India, on this quarter silver rupee from 1936, the final year of his reign.





His son King George VI would be the last British Emperor of India. This 1937 silver crown was one of the first coins to feature Bertie's portrait.



For much of recent history, Her Late Majesty Queen Elizabeth II was the most recognisable person in the world – she adorned coins and banknotes in every continent except Antarctica.

“She adorned coins and banknotes in every continent except Antarctica.”





Canada was the first country to feature Queen Elizabeth II's portrait on banknotes. One of the earliest is this C\$50 bill from 1954, the year after her coronation. It took until 1960 for the young queen to feature on English banknotes.

QUEENS TO GUILLOTINES

Photographed here is one of the last French livres, featuring King Louis XVI.



“ After the French Revolution, there was a notable lack of monarchs' heads.”



After the French Revolution, there was a notable lack of monarchs' heads. This left the Monnaie de Paris, the French mint, in need of an alternative. New symbolism was required to mark the birth of a new republic.

This 1812 Napoléon depicts Napoleon Bonaparte with a laurel wreath around his head, designed in homage to the emperors of Rome. The kings may have departed, but the trappings of royalty had not.

Gold 20 franc pieces proved remarkably resilient and were carried through to the French Second Republic. New designs and imagery sought to reflect a change in the nation's hopes and aspirations. This example shows Marianne – the female personification of the French Republic – as Ceres, the Roman goddess of agriculture.

Whilst Napoleon I failed to unite Europe by force, his nephew Napoleon III opted for a different approach – he sought to unite Europe through its currency. In 1865, he formed the Latin Monetary Union, using the gold 20 franc pieces as the standard for the new union's coins. This was the first concerted attempt at currency union in Europe, a euro before the Euro.



WAR OF IMAGES

In the Byzantine empire, coinage was weaponised in an iconographic struggle for power. A war of images emerged between Caliph Abd al-Malik and Emperor Justinian II – the last emperor of the Heraclian dynasty, whose reign of terror ultimately led to his nose being chopped off.

Abd al-Malik issued a series of coinage reforms across the Islamic Caliphates in the seventh century AD. These new coins were inscribed with prayers and proclamations from the Qur'an.¹ The Caliph attempted to make a tribute payment using this currency to the Byzantines, but Justinian refused to recognise coins which did not bear Christian symbolism. The rejection of this payment was the *casus belli* for the resumption of the Byzantine-Arab struggle for supremacy.²

The coins of this era provide some of the oldest surviving texts from the Qur'an, adhering to the Islamic prohibition of visual representations of Allah and the Prophet Muhammad.

Pictured is a gold sultani from the Ottoman Empire, struck to mark the reign of Sultan Murad III. It was minted in the sixteenth century in this scriptural tradition.



1 Breckenridge (1959), *The numismatic iconography of Justinian II*

2 Humphreys (2013), *The War of Images revisited*

“Currency today remains a canvas of political and cultural symbolism.”



CURRENCIES AND CONTEMPT

Currency today remains a canvas of political and cultural symbolism.

The individuals and imagery that grace banknotes and coins are varied, fascinating and carefully chosen. Currency, now as then, conveys how a nation wishes to be perceived by its own citizens and others.

A minority of currencies now feature the image of a sovereign or head of state. In many cases, political identity has been supplanted by a cultural one. In Bosnia and Herzegovina, for example, legislation states the Bosnian mark can only feature writers and, as a result, nearly 90% of currency characters are poets.³

Debate rages as to the role of physical currency in our future financial system. The digitalisation of finance and (more disputedly) the rise of cryptocurrencies has changed the way people interact with money.

Proponents of a cashless society cite its efficiency, security, transparency and transnationality. Fans of cash like its solidity and embodiment of shared national and cultural identities.

And, as these pages prove, even long after coins and notes cease being legal tender, they are valued as objects of beauty in their own right. ●

A market miscellany



TOBY LAWES

Investment Associate



POLLY MILSOM

Investment Associate

Blockbusters

THE HUMAN BRAIN IS PHENOMENAL. AND PHENOMENALLY BAD AT COMPREHENDING BIG NUMBERS. We struggle to distinguish between big, very big and enormous. This is problematic for investors: the clouded lens of our numerical cognition makes us unable to assess absolute values in isolation or to interpret the significance of data. Only by comparison and visualisation can we build the context needed to make sense of the millions, billions and trillions.

 = \$100 BILLION

or

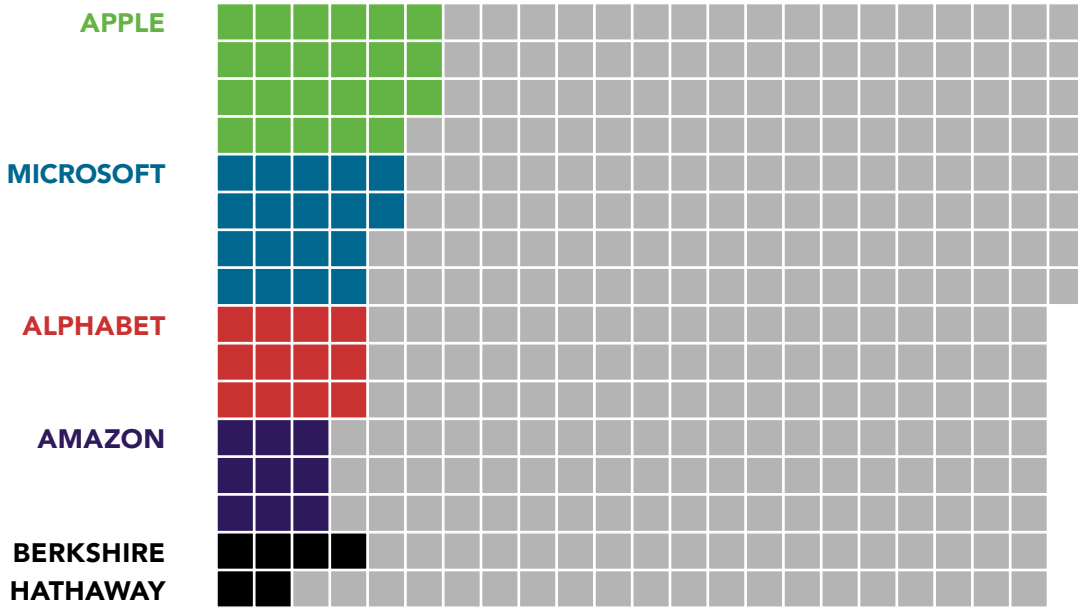
| | |
|--|-----------------------|
| Nord Stream 2 pipeline | \$11bn ¹ |
| + Consumer spending generated by Superbowl LVI | \$14.6bn ² |
| + Price paid for Twitter | \$44bn ³ |
| + Ukraine military spending in 2022 | \$8.3bn ⁴ |
| + Mackenzie Scott's charitable donations 2020-2022 | \$12bn ⁵ |
| + Value of plant-based meat substitutes market | \$10.1bn ⁶ |

 = ELON MUSK⁷

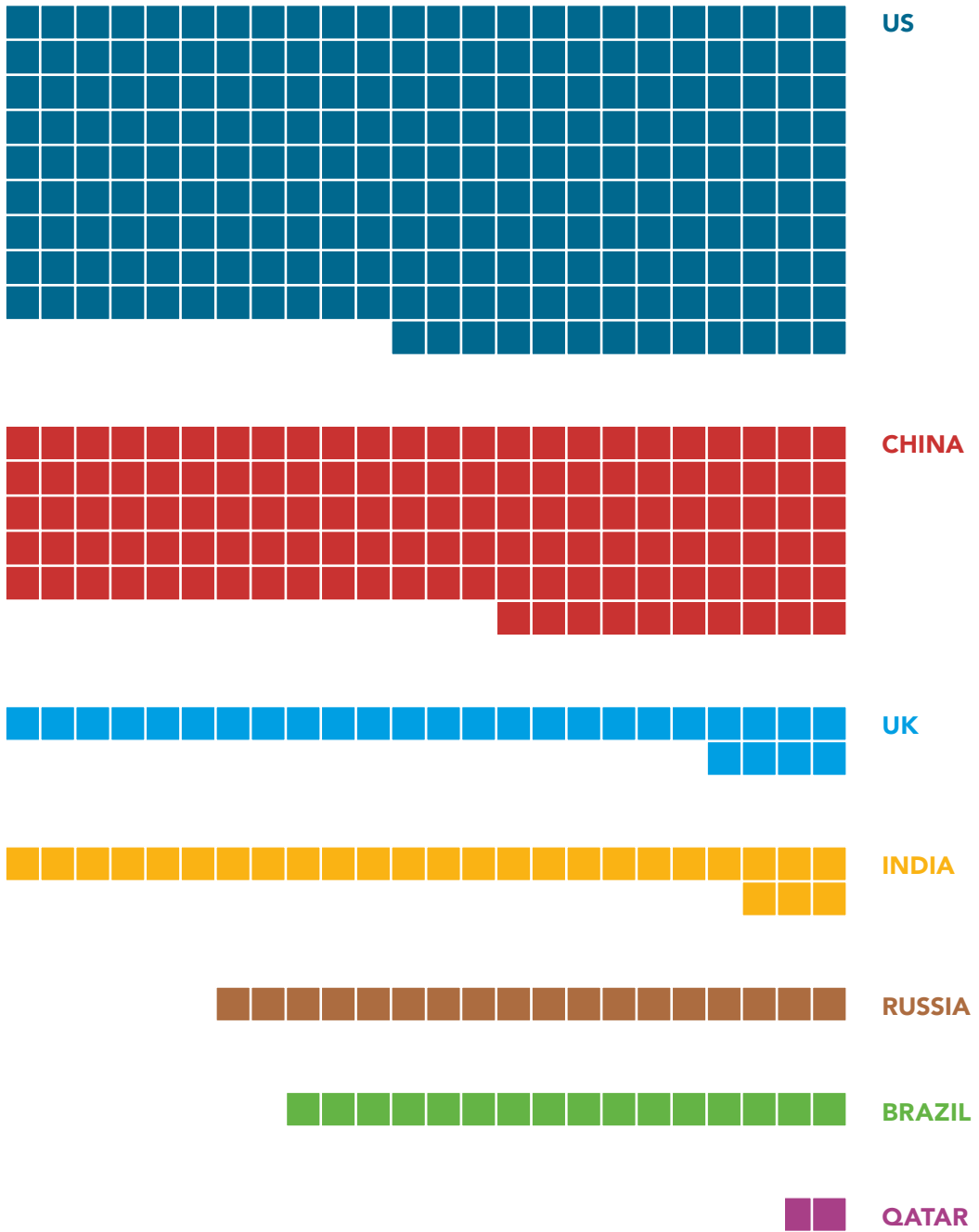
 = CRYPTOCURRENCY NOVEMBER 2022⁸

 = NOVEMBER 2021 PEAK

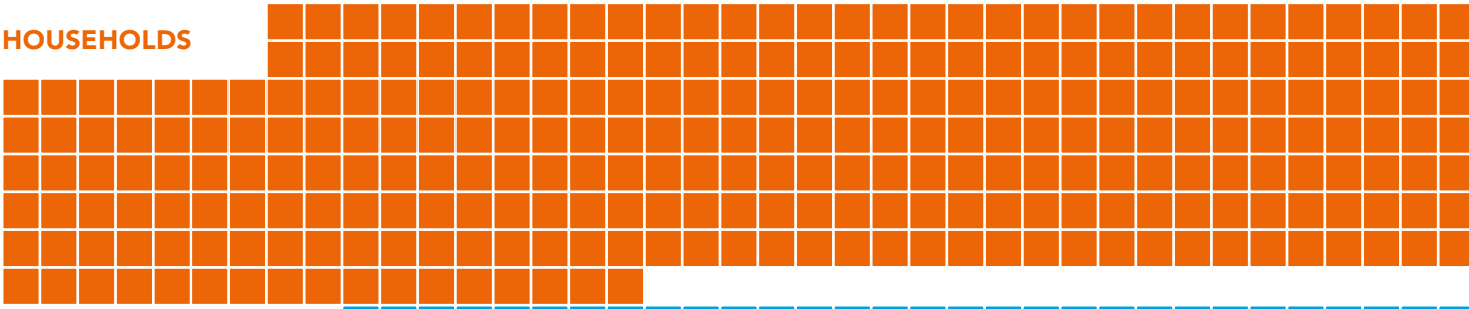
THE US STOCKMARKET ⁹



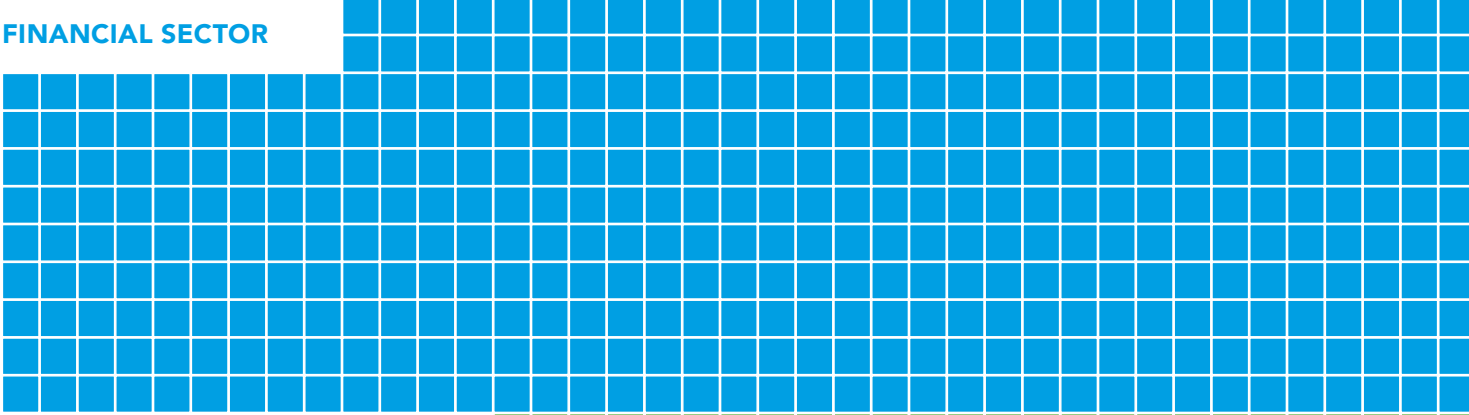
NATIONAL GROSS DOMESTIC PRODUCT (GDP) ¹⁰



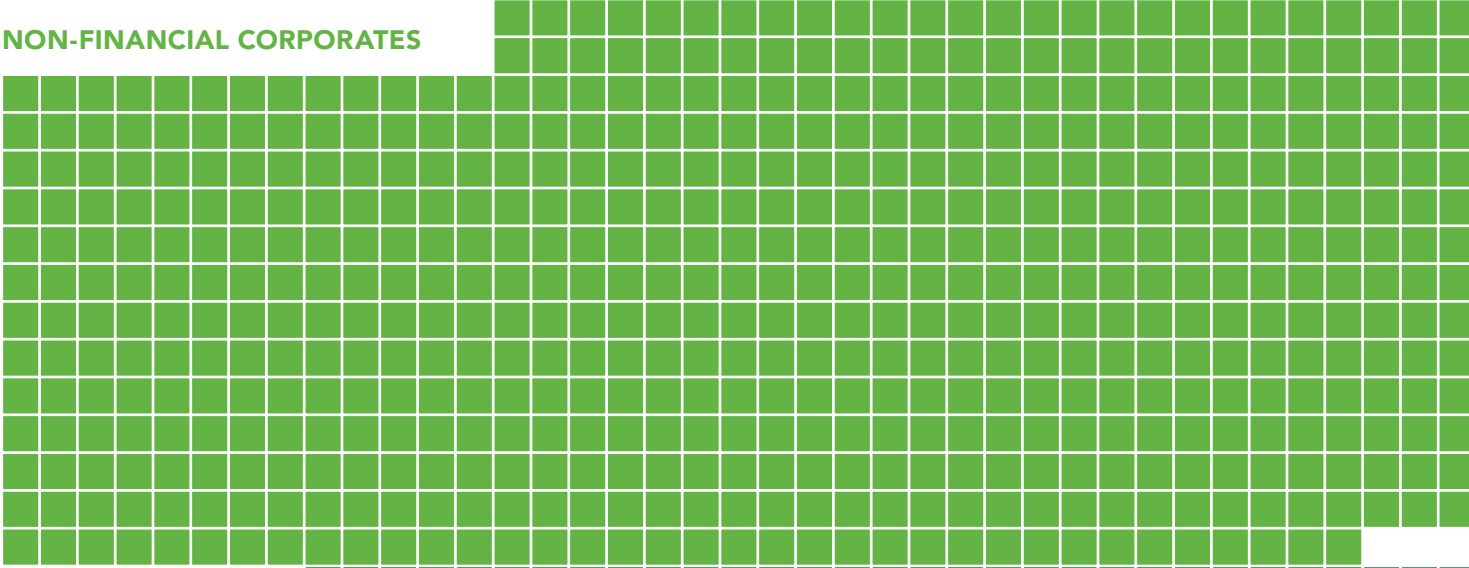
HOUSEHOLDS



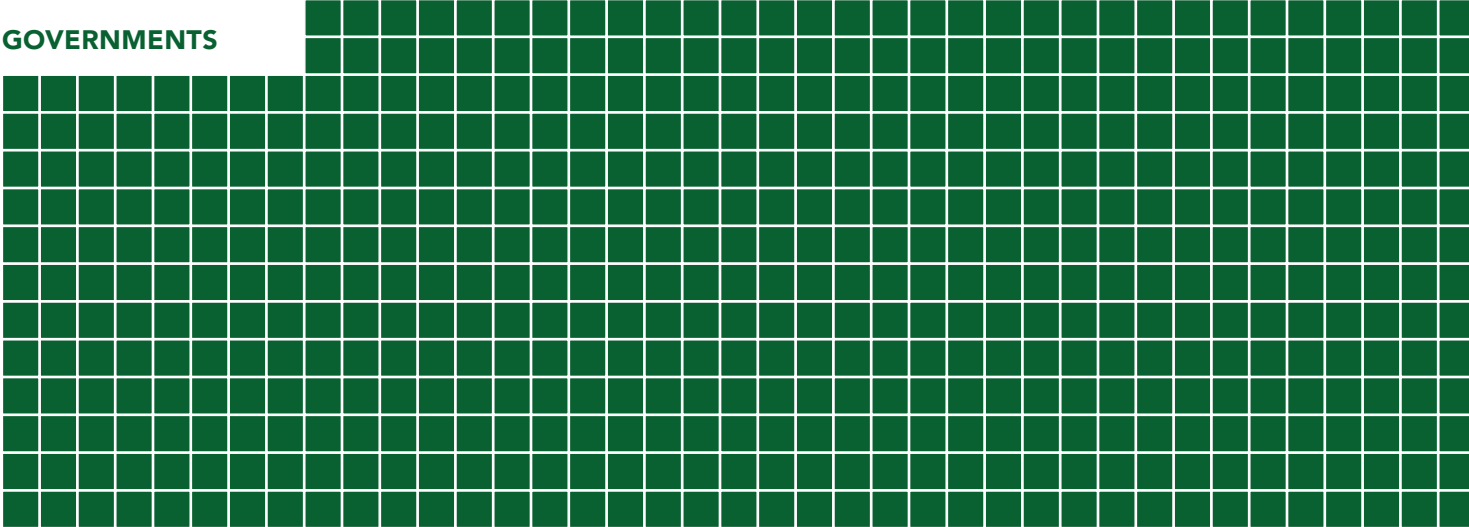
FINANCIAL SECTOR



NON-FINANCIAL CORPORATES



GOVERNMENTS





GLOBAL DEBT ¹¹

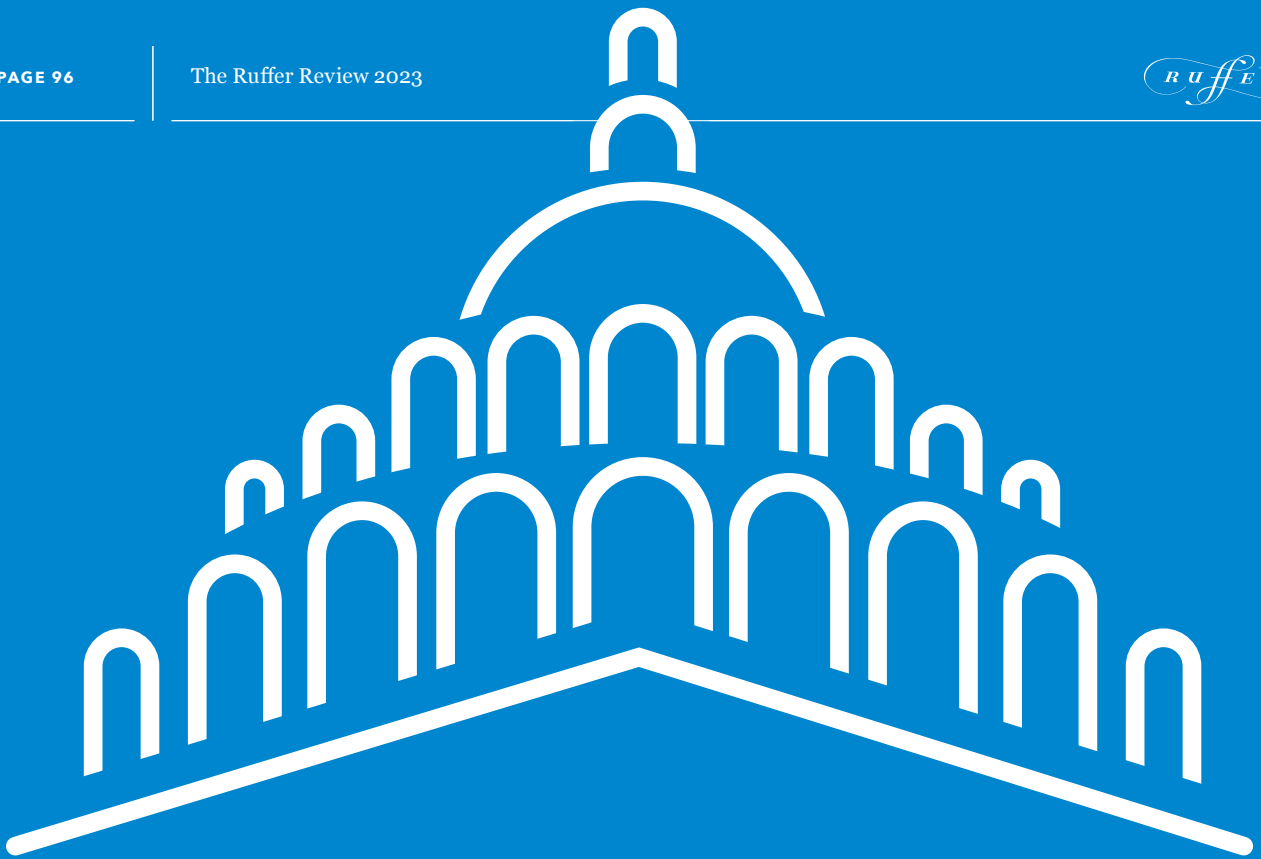
THE GLOBAL ECONOMY IS AWASH WITH DEBT. Is that a bad thing? How much debt is too much?

In the post-2008 environment of ultra-low interest rates, debt ballooned with few apparent adverse consequences.

But the trouble comes when interest rates rise, increasing the cost of servicing debt – at household, corporate and national levels. Higher debt repayments eat into disposable income, squeeze profit margins and shrink the public purse.

Just a 1% increase in global interest rates would result in an additional \$2.9 trillion of debt repayments (or 29 blocks) – equivalent to the total GDP of France. The intolerance of the global financial system to higher interest rates points to an era of financial repression, in which interest rates are held below the rate of inflation. The challenge for investors is to find assets which can survive – let alone thrive – in this hostile environment.

¹¹ Data as at 1 September 2022
Source: Institute of International Finance (IIF), Global Debt Monitor, Q3 2022



PERCENTAGE OF US CONGRESS MEMBERS OVER 70 YEARS OLD



“ A gulf has emerged between those entrusted to shape the political future and those who will live it.”

Over the (Capitol) Hill?

ARE THE OWNERS OF THE FUTURE LOSING THEIR SAY IN IT?

The chart illustrates how the age profile of Congress has changed since 1800. More than one fifth of members of the 118th Congress are 70 or older.

Among the main drivers of this trend is incumbency. Bolstered by name recognition and generous campaign funding, members of Congress rarely fail to win re-election. And, given the increased longevity of rich Americans, they often remain in post for many decades.

A gulf has emerged between those entrusted to shape the political future and those who will live it.

The main issues on which opinions diverge between the generations are medical spending, immigration reform and climate change. According to a 2021 Gallup poll, some 78% of 18 to 29 year olds ‘worry a great deal/fair amount about global warming’,

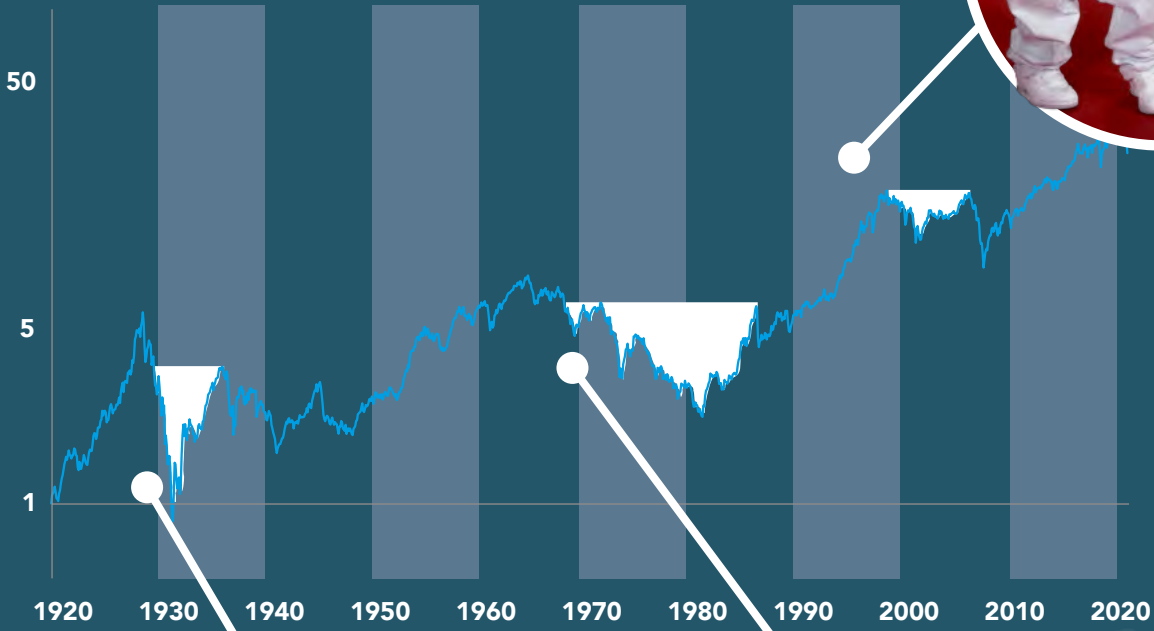
compared with 60% of over 65s.

Should we be concerned by the ageing of America’s lawmakers?

Maybe, insofar as legislation benefits the nation’s old at the expense of its youth. But it would be wrong to assume, simply because a senator or representative is of a certain age, that they are not motivated to deliver successful outcomes for younger generations.

If this trend continues, the bigger question may be: are they still capable of doing so?

INFLATION ADJUSTED VALUE OF \$1
invested in the Dow Jones Industrial Average since 1920



Curiouser and spuriouser

FINANCIAL MARKETS ARE OBSESSED WITH TURNING POINTS. When will the bull market end? Is the bottom in? How long can this rally be sustained?

Investors seize on many things to inform their views. They may look to history. Or try to identify trends in economic data: has the ISM manufacturing index fallen below its normal range? Are we at peak inflation? What is the trajectory of consumer spending?

One school of thought argues charts themselves are the best tool for identifying turning points. Technical analysts, also known as chartists, believe financial markets exhibit trends and patterns that tend to repeat over time. For them, charts,

not fundamentals, are the way to anticipate turning points. But correlation does not mean causation.

Correlations can be found wherever you look; but, on closer inspection, many turn out to be spurious. One of the most reliable signals of stockmarket peaks over the past century has been the popularity of baggy trousers. The 1929 Wall Street Crash coincided with a fashion for high waisted and loose-fitting trousers, pioneered by Oxford bags. It was flares in the 1970s and cargo pants in the dot.com bust.

So, when Vogue next heralds baggy jeans as a 'surefire trend for next season', perhaps we ought to fear another leg down.

“ One of the most reliable signals of stockmarket peaks over the past century has been the popularity of baggy trousers.”



WHATEVER
IT BREAS

JAMIE DANNHAUSER*Economist*

BY 1980, CENTRAL BANKERS WERE PREPARED TO DO 'WHATEVER IT TAKES' TO DEFEAT INFLATION. TODAY, THEY FACE THAT ENEMY ONCE AGAIN. Investors expect inflation to drop sharply in 2023 and the monetary cavalry to arrive by the second half of the year. But might those hopes be misguided? Without a sharp deterioration in labour markets or severe market distress, central bankers may just keep conditions tighter, and for longer, than investors expect. When the monetary cavalry eventually does come, it might be too late to save Wall Street. Will central banks choose to quash inflation, whatever it breaks?

"EVERYBODY LIKES TO GET RID OF INFLATION

but when one comes up to actions that might actually do something about inflation, implicitly or explicitly, one says: 'Well, inflation isn't that bad compared to the alternatives.'"¹

Paul Volcker

KEEPING AT IT

The now lionised Paul Volcker took the reins at the Federal Reserve (Fed) in August 1979. In the ten preceding years, US inflation had averaged 6.4%, with a peak of 11.6% in October 1974.²

But high and entrenched inflation was only one facet of the 1970s economic malaise. Joblessness, on a scale unseen since

¹ Transcript from the February 1981 FOMC meeting

² US Bureau of Economic Analysis, personal consumption expenditure (PCE) deflator

KS

“The actions of Powell’s Fed will do more than anything else to shape the investment environment of the next few years.”

before World War II, became the norm. The unemployment rate averaged 6% over the decade, reaching a generational high of 9% in 1975.³

By the time President Carter nominated Volcker to lead the Fed, the US was reeling from a decade of economic pain and growing political division, intensified by the Watergate scandal and President Nixon’s eventual resignation. The sustained post-war boom in living standards was a distant memory.

Any lingering political constraints on Volcker’s ability to do ‘whatever it takes’ to defeat inflation were, by 1979, much diminished. Both the Reagan and Thatcher administrations envisaged long-term political benefits from pursuing aggressive anti-inflation policies early in their first terms.

Although the economy has changed radically over the last five decades, we can learn from the experience of the 1970s. Jerome Powell, the current chair of the Fed,

spent much of 2022 invoking Volcker’s legacy. “We will keep at it” has been a recurrent theme of his public statements, an explicit reference to Volcker’s 2018 autobiography.⁴ The Federal Open Market Committee (FOMC) is adamant that it will keep monetary policy tight “until the job is done.”⁵

In our dollar-centric financial system, whether the Fed does ‘whatever it takes’ is the most important question investors should be asking. In the near term, the answer will determine the severity and duration of the coming recession. Just as Volcker’s determination to crush inflation set the stage for the subsequent financial market regime, the actions of Powell’s Fed will do more than anything else to shape the investment environment of the next few years.

“THE DOLLAR IS OUR CURRENCY, BUT IT’S YOUR PROBLEM”

My previous contributions to the Ruffer Review have tried to illuminate the tectonic shifts shaping the economic outlook and financial market dynamics. The central message has been one of regime change, along several dimensions: macroeconomic management, domestic political legitimacy, geopolitical and geostrategic relationships, financial market structure, the energy ecosystem, digital technology’s influence and so forth.

A volatile inflationary environment is emerging, hamstrung by Sino-US geostrategic rivalry and hostile to investors. The consequences for prospective asset returns, market volatility and cross-asset correlations are numerous and profound.

3 US Bureau of Labor Statistics

4 Volcker (2018), Keeping at it

5 Powell’s speech at the Brookings Institution, November 2022

This year’s piece offers a narrower, more cyclical perspective, focused on the US economy and the Fed’s efforts to bring inflation down from a 40 year high. Today, little beyond the US economic cycle matters to the FOMC. And, for investors, cyclical developments outside the US are playing second fiddle to considerations of the Fed’s reaction function and hiking cycle.

At the 1971 G10 meeting in Rome, US Secretary of the Treasury John Connally said the dollar “is our currency, but it’s your problem.” That blunt observation rings even truer today. Global asset markets increasingly dance to the same tune, orchestrated by the conductor of the dollar financial system, the Fed. Domestic economies cannot escape from the increasingly synchronised global financial cycle, even with floating exchange rates.⁶ And, at turning points in that cycle,

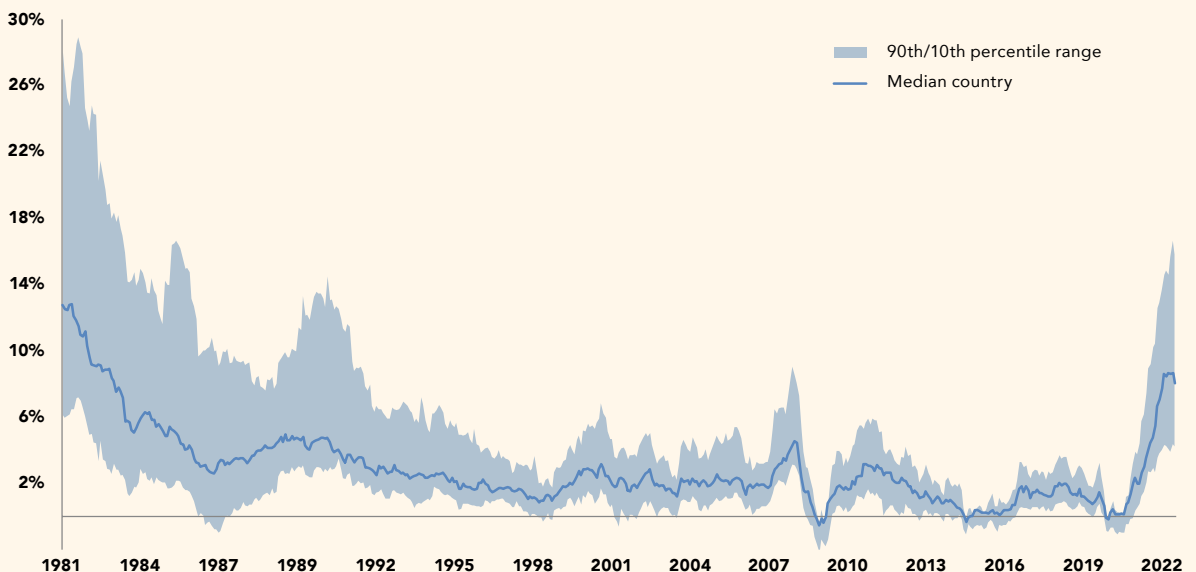
almost nothing other than Fed policy seems to matter.

TRANSITORY INFLATION TO COME OUT OF RETIREMENT

Surging inflation was the story of 2022. Stable in a narrow band around 2% since the mid-1990s, it jumped to its highest level in four decades. In the average advanced economy, inflation reached 9% (Figure 1); many European countries, more exposed to imported energy and raw materials than the US, are suffering from double-digit inflation. Germany, Europe’s inflation-averse dominant economic and political power, hasn’t seen prices rise this quickly since its inflationary burst immediately after World War II. ‘Transitory inflation’, the dominant narrative when last year’s Review was being written, has been well and truly retired.

Or has it?

Figure 1
HEADLINE INFLATION IN ADVANCED ECONOMIES, 12 MONTH RATE, %



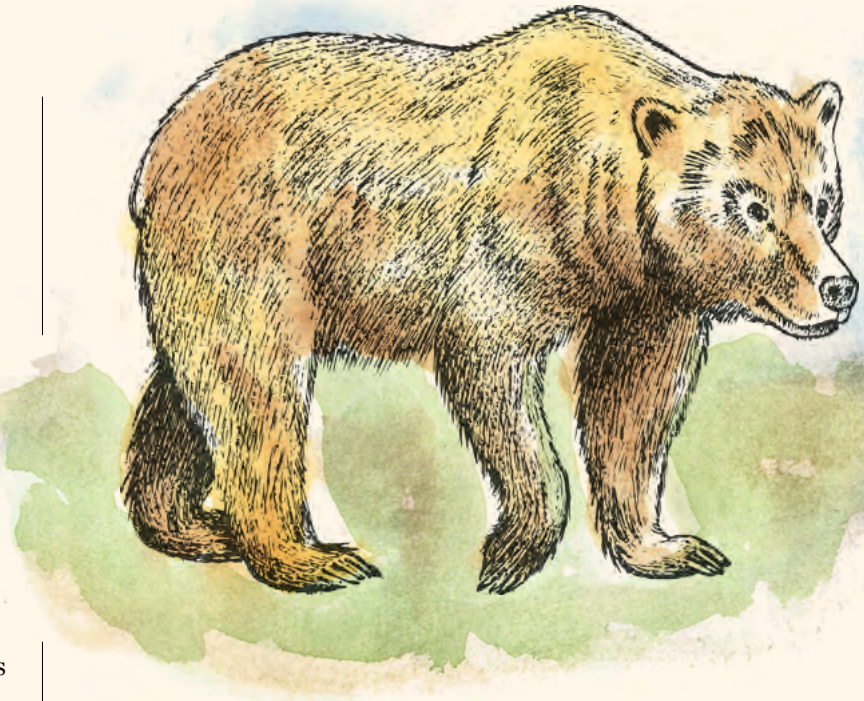
6 Miranda-Agrrippino & Rey (2022), The global financial cycle
 Source: Refinitiv, national statistical agencies, OECD, all items CPI

Investors broadly agree on two things. First, major economies will fall into recession in 2023 (if they are not already there). Second, inflation rates have peaked and will decline sharply, maybe not back to inflation targets, but most of the way there. Sounds like transitory inflation after all.

Investors are confident that already-healing supply chains will return to full health as inflation's pandemic-specific drivers unwind – China's abandonment of its zero-covid policy, for example. This is the first justification for today's consensus. The second is that any residual inflationary momentum from overheating labour and product markets will be addressed by actions that have already been taken. Short-term interest rates may need to rise a little further in early 2023, but such moves are already priced into yield curves.

Finally, there is a belief that the recession ahead of us will be short and shallow, as will be the hit to corporate earnings. And, beyond the current burst of inflation, there are no threatening economic or financial imbalances that will turn a run-of-the-mill downturn into something more destructive. Private sector balance sheets are relatively healthy, aided by fiscal giveaways during the pandemic and a decade of tight lending standards after the global financial crisis (GFC).

Investors also take comfort that the banking system has historically large buffers of capital and liquidity, heavily fortified after a decade of regulatory pressure. That no core asset class has broken, despite the rapid repricing of short-term interest rates, adds to the sense that the financial system is structurally well prepared.



A CYCLICAL BEAR MARKET?

The consensus forecast (of a cyclical bear market) is underpinned by the following narrative. Downside earnings risks are limited because the recession will be unremarkable. The inflationary dangers will prove transitory after all, so Powell and his colleagues can pivot quickly into an easing cycle. Ignore the Fed rhetoric of 2022. The Fed put is close to being in the money. And most of the market turmoil is already behind us.

But the path to a cyclical bear market is very narrow. It would require an unexpected sharp and persistent drop in US (core) inflation, and just the right amount of economic weakness: enough for the Fed to start cutting rates but not so much that the jobs market starts contracting, in which case any policy pivot won't be in time to stop the self-reinforcing downward momentum characteristic of recessions. Bulls will have to hope that there are no more nasty surprises, eg from a chaotic reopening in China, a renewed spike in global energy

“A decade of free central bank money has left in its wake the mother of all short-volatility trades – a crowded bet that inflation risk has been eliminated for good.”

prices or an unexpected twist in the Russia-Ukraine conflict. But, equally, too much good news – eg because Chinese activity rebounds strongly after a short-lived but manageable covid ‘exit wave’ – and there will be no Fed pivot at all. China’s reopening boom may, in fact, be so powerful that hopes of a Fed pivot are quickly replaced by fears of an even higher peak in US interest rates. Expectations of dramatic global goods disinflation would surely be squashed.

If Lady Luck is smiling on Powell, the cyclical bear market scenario is just about possible; but the odds look remote. As complex and dangerous as predicting the future is, there are fleeting moments in financial markets when the way ahead seems surprisingly clear. This is one.

The Fed can only slow the economy and curtail inflation by tightening financial conditions. Its policy cannot gain traction on the real economy unless we see lower equity prices, higher treasury yields, wider bond spreads and greater constraints on bank

borrowing. The more financial conditions are buoyed by evolving data (the ‘bad news is good news’ dynamic) or miscommunication by the Fed, the harder Powell will have to slam on the brakes. Unfortunately, we cannot return to a world of low and stable inflation without a sizeable economic correction. That would mean the equity bear market has further to run.

AIR POCKET AHEAD

This hints at an underappreciated danger: financial conditions could tighten much further, beyond what the Fed is ultimately comfortable with. A decade of free central bank money has left in its wake the mother of all short-volatility trades – a crowded bet that inflation risk has been eliminated for good.⁷

Policymakers are confident the financial system is far less fragile than it was a decade ago. In their view, the pernicious dynamics that lead to disorderly financial markets stem from excessive leverage and short-maturity funding in the banks and dealers at the core of the system. These weaknesses have been addressed since the GFC.

We remain sceptical. Post-GFC regulation has reduced systemic risk: the economy is better insulated from the financial system. But, within the financial system, risk has largely been transformed – (asset) illiquidity is the new (balance sheet) leverage – and pushed beyond the regulatory perimeter into non-bank financial institutions. The violent blow-up of the UK’s liability-driven investment (LDI) sector was a timely reminder that an unlevered asset manager-dominated system can be fragile, unstable and destructive. A reminder too that the central bank’s balance sheet is no less necessary as a guarantor of orderly market conditions.

Fragilities can persist for long periods, hidden from view, without the system breaking. Regime change is, as history shows, a process not an event. It needs a trigger but also internal system dynamics that reinforce, rather than negate, any emergent shift towards volatility and disorder.

The most plausible trigger is a realisation by market participants that the FOMC is not prepared to bail out investors by pivoting towards looser policy aggressively in the coming recession – at least not initially. The transition from “sufficiently restrictive for some time” to interest rate cuts won’t happen immediately.

An immaculate disinflation is for the birds. In this cycle, the Fed is hitting the brake late and hard. Whenever this has happened historically, the US economy has gone into recession.

But, if the recession turns out to be short and shallow, shouldn’t a cyclical bear market be the base case?

REVERSE CAUSATION

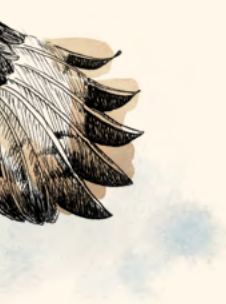
No. The logic is backwards. A cyclical bear market cannot follow from a short and shallow recession. In that scenario, the inflation genie escapes, something central bankers are not currently prepared to countenance.

A short and shallow recession is the probable outcome for the real economy but only because a much nastier drawdown looms for risk assets, a drawdown that ensures the monetary cavalry arrives. Only then will central bankers have the political tailwinds necessary to loosen policy despite still-elevated inflation. Too late for markets; in the nick of time for the real economy.

Both the FOMC and investors believe the coming recession will be short and shallow. For this reason, policy will need to ensure a more dramatic and sustained tightening of



“An immaculate disinflation is for the birds. In this cycle, the Fed is hitting the brake late and hard.”



financial conditions. In Fed speak, Powell will want to err on the side of tightening too much.

That could well be when markets least expect it, just as a recession is beginning, when anticipation is mounting that the cavalry will arrive in the form of an early and aggressive Fed pivot.

It is the emergence of disorderly market conditions in the face of a recession that will bring the Fed put into play. A subsequent easing cycle should ultimately ensure a short and shallow recession, but the damage to asset prices will already have been done.

THE GENIE HAS ESCAPED

The drawdown in equity and credit markets has further to run. The central conceit in markets today (shared by the Fed) is that, absent high inflation, there are no economic or financial imbalances that will deepen any

recession. But to think high inflation will remedy itself, as the pandemic disappears into the rear-view mirror, is a fallacy.

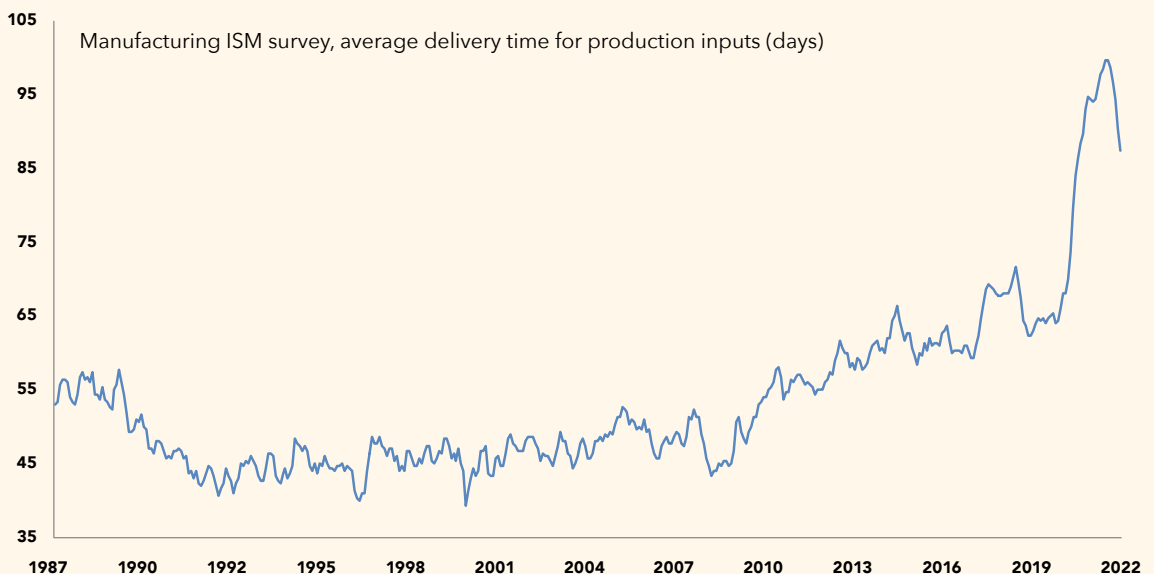
First, this view downplays how far demand-led overheating, induced by the largest stimulus programme in peacetime history, has driven the inflationary surge.⁸ Too much money chasing too few goods.

Second, it assumes the dramatic changes in where people choose to live, how they choose to work and on what they choose to spend will reverse quickly post pandemic. The opposite is true. These shifts, and the disruptive impact on economies' productive capacity, seem likely to persist, many indefinitely (Figure 2).

Third, it ignores the fact that inflationary pressures have now spread across the entire consumption basket. Nominal wage growth is far too high for comfort. Consumers and businesses have noticed the inflationary environment has changed. The pendulum

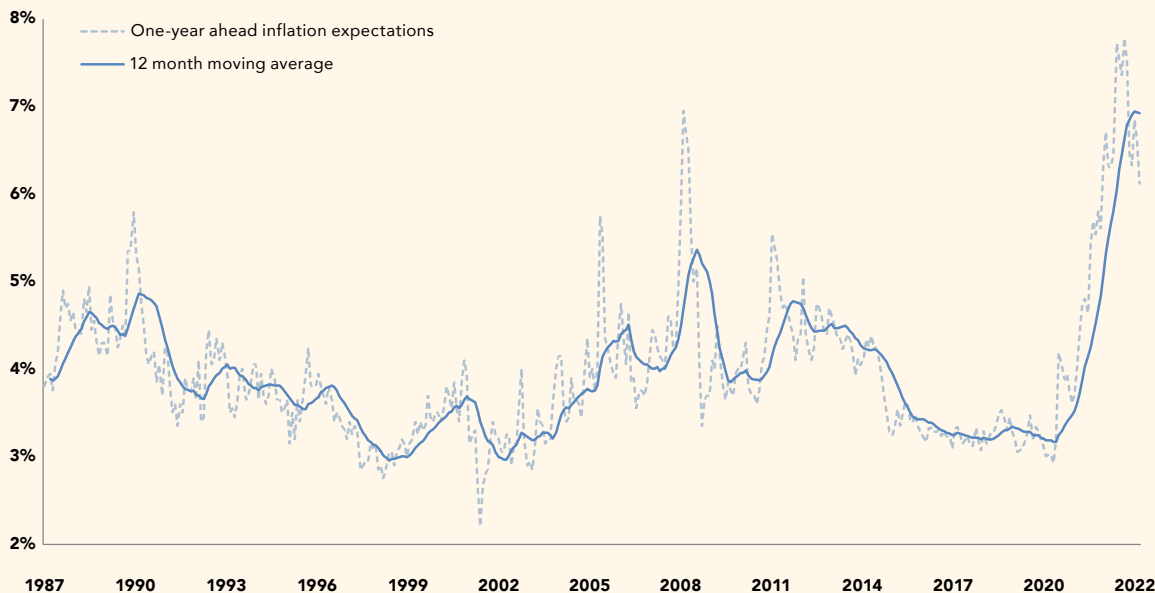
Figure 2

LEAD TIME FOR PRODUCTION INPUTS FOR US MANUFACTURERS



8 Eickmeier & Hofmann (2022), What drives inflation? Disentangling demand and supply factors
Source: ISM

Figure 3
US CONSUMERS' INFLATION EXPECTATIONS, %



may have swung a long way from labour to capital since the 1970s but the political momentum is now with workers. After scant gains in living standards since the 2008 crisis, workers won't, in a strong labour market, resign themselves to ongoing real wage cuts. Central bankers reassure us that inflation expectations remain well anchored, but this isn't what surveys of consumers and firms tell us (Figure 3).

Without a material economic downturn, inflation is very unlikely to fall back to target. But what matters for markets is whether the FOMC believes it will. And, therefore, how long the committee waits for data consistent with a persistent improvement in underlying inflation.

Whenever macroeconomic conditions deteriorate in 2023, the transitory inflation narrative will stage a comeback. But the FOMC has stated its intention to keep policy "at a restrictive level for some time." As Powell said in November 2022, "History

cautions strongly against prematurely loosening policy."⁹ And we should not be surprised: across the suite of models employed by Fed staffers, most, if not all, are pointing to inflation well above 2% over the medium term.

In 2023, we will see whether a financial ecosystem sanitised by a decade of cheap money, and a deep-seated belief in the Fed put, is prepared for that moment when the US economy has gone into recession but the monetary cavalry is still some distance away.

An air pocket awaits, when the economic data is deteriorating fast (along with analysts' earnings estimates) but before risk-free discount rates get any support from a Fed easing cycle.

⁹ Powell's speech at the Brookings Institution, November 2022

Source: Unweighted mean of measures from University of Michigan (mean) and Conference Board (mean), NY Fed (median, point estimate) included from June 2013

A SLOOS AROUND THE MARKET'S NECK

The FOMC hiked the Fed Funds Rate by 425bps in 2022. Less than a year into a hiking cycle, it is unusual to be talking about an imminent recession. And the latest data suggests the US economy is humming along nicely, eg growth in non-farm payrolls of 250,000 per month in the fourth quarter of 2022. But Fed policy today works as much through signals of future policy intentions and management of its bloated balance sheet, as it does through changes in the Fed Funds Rate. A more holistic measure of Fed monetary policy (Figure 4) suggests policy started shifting in summer 2021, with dramatically larger cumulative effects on monetary conditions than a casual observer might perceive.

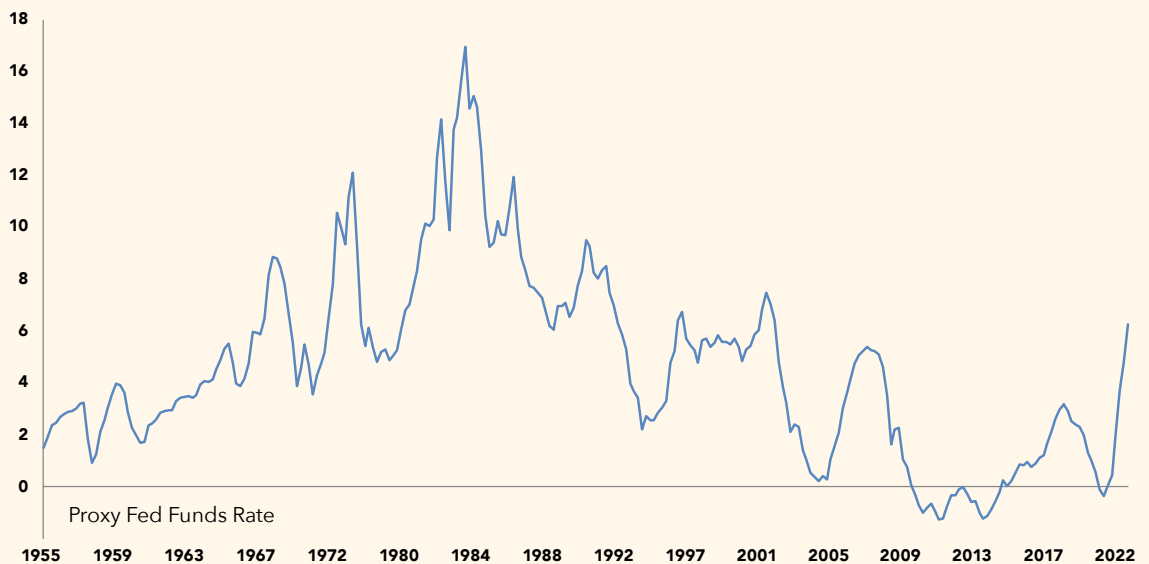
Gauging the pass-through to private sector credit availability – the next link in the chain – is always more art than science.

Ephemeral forces, such as liquidity in financial markets, influence how forcefully central bank action bites. The orderly correction in asset prices in 2022 suggests that this pass-through has been limited to date. And, with a peak in the Fed hiking cycle expected soon, investors appear confident there is little more damage to be done. No wonder most expect the recession to be short and shallow.

That is one, optimistic, view. The other, more realistic, perspective is that there is a long and variable lag between policy tightening and any deterioration in credit conditions, and policy has only recently become restrictive, ie with the Fed Funds Rate above its neutral level.

Notably, the most reliable (and forward-looking) indicator of the credit cycle – the Fed's Senior Loan Officer Opinion Survey (SLOOS) – shows lending standards

Figure 4
STANCE OF US MONETARY POLICY, 1955-2022, %



Source: FRB, FRBSF, Fed Funds Rate before 1977, then FRBSF proxy FFR, deflated using forecasters' one year ahead expected inflation

Figure 5

CHANGE IN US BANKS' LENDING STANDARDS ON NEW LOANS



tightening sharply (Figure 5). Indeed, by the time bank lending standards had tightened this far in past cycles, the US economy was already in recession.

In this cycle, the growth headwind from tighter credit conditions has emerged more slowly than expected. The large buffer of liquid savings, built up during the pandemic, is one reason. More robust banks and exceptionally strong corporate cash flows must also have played a role. The cumulative impact of reduced credit availability should be less severe too, because a decade of tight lending standards has produced an unusually small cohort of highly leveraged household and corporate borrowers. But the US economy won't be able to shrug off this tightening cycle. At best, the deterioration in credit supply constitutes a major cyclical headwind. More likely, it will be sufficient to tip the US into recession.

This won't, though, be a repeat of the GFC, a credit crunch in the 'real economy'. The looming danger instead is that banks' broker-dealer subsidiaries reduce access to their balance sheets.

This is the most likely accelerant of asset market distress in 2023. The SLOOS tells us that US banks are becoming less prepared to deploy their balance sheets towards the real economy. Increased loan losses will accelerate this trend. The underappreciated danger is that, just as this is happening, banks become less willing to undertake the low-margin capital-intensive activities that lubricate the flow of collateral and leveraged position-taking in the financial system.



“2022 was the year the fast money lost faith in the post-GFC bull market.”

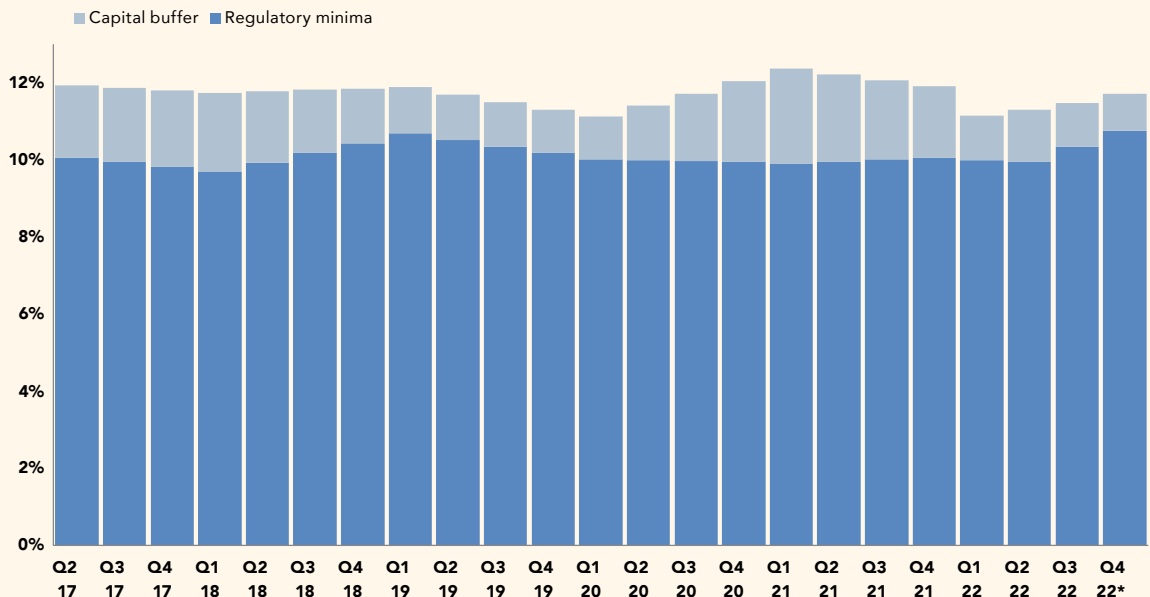
A HURRICANE IS COMING

The general view: there’s nothing to see here. Bank capital buffers are substantial, while reserves at the Fed – the core of banks’ high-quality liquid asset stocks – are \$3 trillion (11% of the system’s non-cash assets).¹⁰

Yet Jamie Dimon, CEO of JPMorgan, disagrees. In June 2022, he suggested a hurricane is “coming our way”, alluding to the Fed’s policy of quantitative tightening (QT) and additional regulatory demands that have eaten into banks’ capital buffers (Figure 6). He warned that JPMorgan would be “very conservative with our balance sheet.” This from the financial institution with seemingly the most rock-solid balance sheet of them all.

The Fed’s own survey of US broker-dealers (Figure 7, next page) suggests the wind speed is already picking up. ‘Fast money’ investors depend heavily on dealer balance sheets. They are the conduits for the

Figure 6
US BANKS’ EXCESS CAPITAL, % OF RISK-WEIGHTED ASSETS



vast flows of collateral and off-balance sheet leverage upon which the former's investment strategies rely. 2022 was the year the fast money lost faith in the post-GFC bull market.

But it wasn't for other types of investors. The ebbing liquidity tide has exposed the most extreme sentiment-fuelled investments, as it always does. Cryptocurrency and profitless tech have already imploded. But retail investors have stayed 'risk on' (Figure 8). This is the main reason the correlated bond and equity drawdowns have been so orderly.

Retreat may be at hand. Short-dated USD paper yields almost 5%. Money market funds, the most direct alternative to deposit accounts at banks, now offer retail investors a rate of return last seen 15 years ago. A decade of historically low interest rates has driven a search for yield, forcing investors into more complex, illiquid asset classes and strategies. Now that there is a cash

alternative offering a reasonable nominal return, the question is not if portfolio allocators de-risk, but how quickly and from what assets.

Bulls hope that inflation will normalise quickly, earnings will hold up and the Fed will turn dovish. But why would inflationary pressures suddenly dissipate? If they do because covid disruption turns out to have been their main driver, surely we should also expect a surprisingly large fall in corporate margins, artificially inflated by the pandemic?

But, if covid-related factors just played a supporting role, a sharp drop in inflation will only occur because a recession has driven unemployment up meaningfully. How quickly can the Fed, so concerned about not letting the inflation genie out of the bottle, realistically reverse course when the inflation data improves? If the real economy is deteriorating fast enough to leave the FOMC confident that inflation will drop like

Figure 7

FEDERAL RESERVE'S SENIOR CREDIT OFFICER OPINION SURVEY (SCOOS)

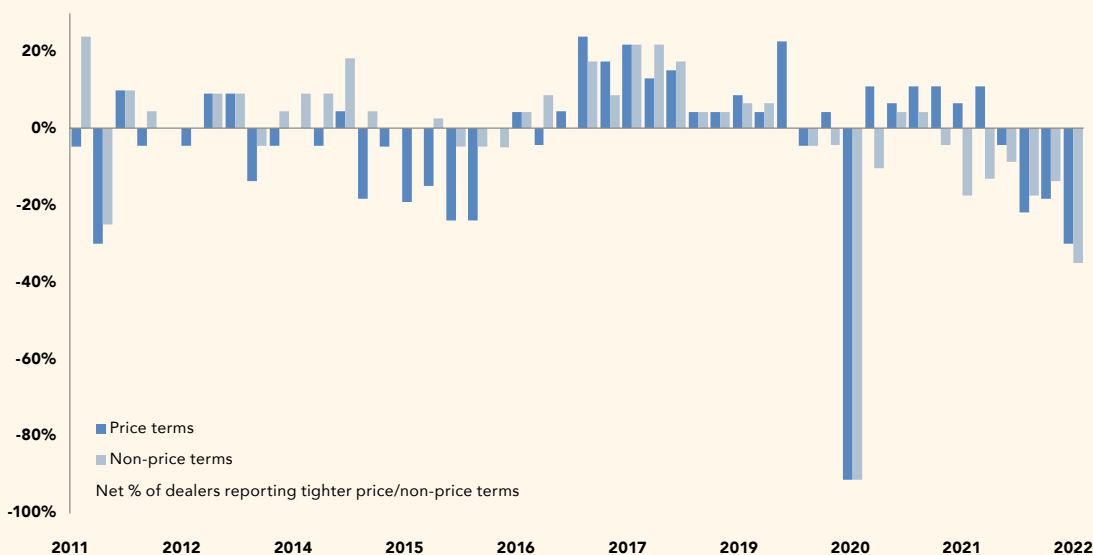
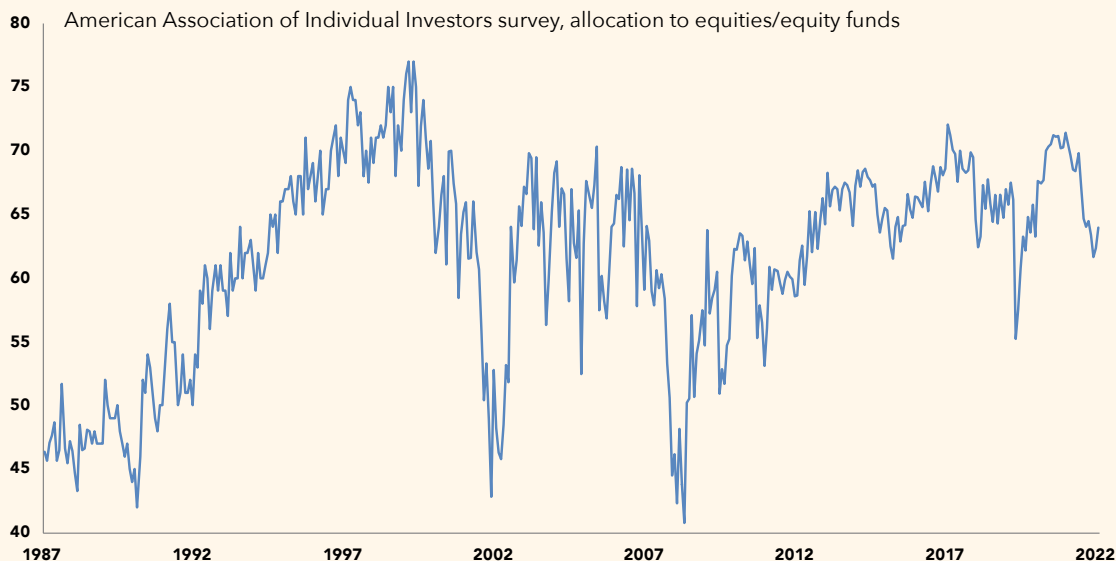


Figure 8

RETAIL INVESTORS' ALLOCATION TO EQUITIES

a stone, why wouldn't investors also price in significant downside to corporate earnings?

We don't have reasonable answers to these questions. So we are left deeply sceptical of the cyclical bear market narrative.

Goldilocks' return depends on a short and shallow recession, a rapid decline in inflation and an aggressive Fed pivot. Not impossible. But it is hard to see how all three can come to pass. And all three are needed if a benign market environment is to return quickly.

A PRICE WORTH PAYING

Policymakers face their biggest inflationary test in decades. The reputations of both Powell and the Fed are on the line. Nobody wants to make the same mistake as Fed Chair Arthur Burns in the 1970s. No central banker dare say this out loud, but a shallow recession is a price worth paying for slaying the inflationary enemy. The main reason we are confident the Fed will be late to initiate an easing cycle is that central bankers

clearly prefer this to be their legacy.

Recent history suggests otherwise – which is why investors expect the Fed to shift gear quickly once a recession starts. But this has not been a normal business cycle. Despite the recessionary dangers, central bankers fear entrenched inflation, not debt-driven deflation. Expectations of a pivot are set to be disappointed until either the real economy is in serious trouble or the rout in financial markets is sufficiently troubling.

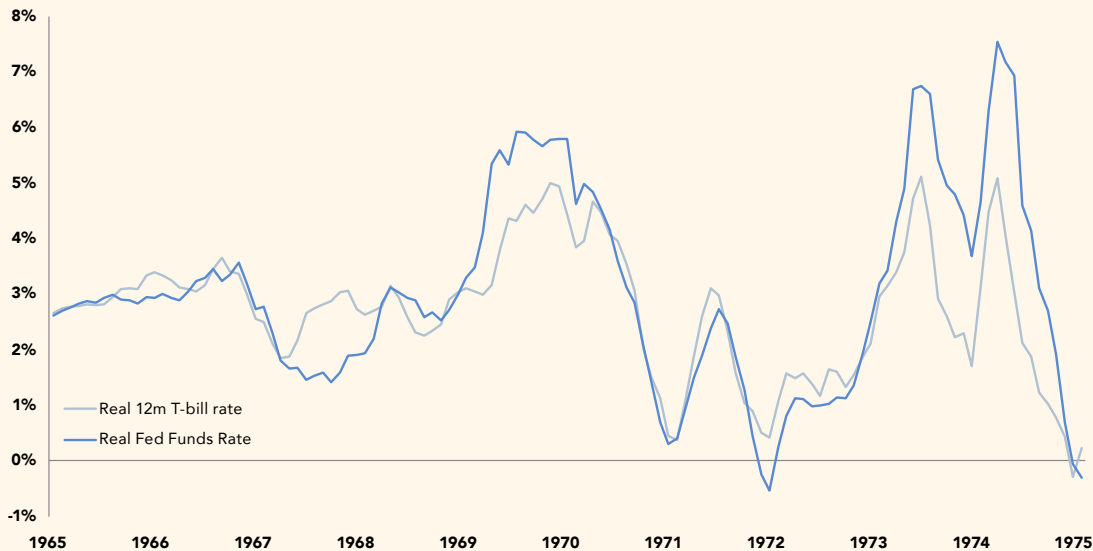
For the moment, this Volcker-esque strategy has a political tailwind: inflation is sky-high and it matters to voters, while unemployment is at a multi-decade low. Powell can afford to sound and be tough. Intellectually, there is scant opposition. But these tailwinds could quickly disappear.

CONDEMNED TO REPEAT?

The historical lesson may not come from Volcker's Fed, but from an episode a decade prior. Like Powell today, William McChesney Martin presided over a rapid and abrupt

Figure 9

US REAL INTEREST RATES, 1965-1975



hiking cycle, at the end of the 1960s. In 1969, his FOMC lifted real short-term interest rates by 350bps, the most severe monetary squeeze in the post-war period. There was no shortage of hawkishness while the economy was booming back then. Like today, inflation accelerated materially and unexpectedly.

But, when the 1970 recession arrived, there was neither the political will nor the intellectual support inside or outside the Fed to keep policy tight, despite elevated inflation. Burns cajoled the FOMC to loosen policy aggressively once the economy had rolled over (Figure 9). Recession was expected to bring down inflation sharply, but the disinflationary impulse created by the 1970 downturn was woefully insufficient to rid the US economy of its inflation problem.

Once the economy had entered recession, the Fed reversed course rapidly, and with real gusto. Despite lingering concerns about inflation, it did not wait for evidence that inflationary pressures were subsiding once

the jobs market had turned down. But it was never enough. The 1971-72 upswing began with underlying inflation far above what today would be consistent with the Fed's mandate. The policy error was not a lack of hawkishness as policy was tightened. The miscalculation was the urgency and aggressiveness of the easing cycle during the recession.

THE CAVALRY WILL COME, JUST TOO LATE

At best, it is going to be an uphill struggle for central banks in light of the GFC's political legacy. At worst, they will fall into the same intellectual trap as Burns' FOMC. The instinct towards institutional self-preservation is strong amongst central bankers.

The post-pandemic boom has created the political space for dispensing tough monetary medicine. But that space could evaporate rapidly once unemployment is

rising and headline inflation is falling. It will disappear altogether if financial markets become disorderly. The Fed put may be out of the money, but not that far out.

After all, financial conditions remain a critical input into the Fed's forecasting process. Those of a dovish persuasion on the FOMC will be hard pressed to ignore what the models tell them: that sharply lower equity prices and wider credit spreads herald a recession and broad disinflationary pressures. FOMC participants are adamant

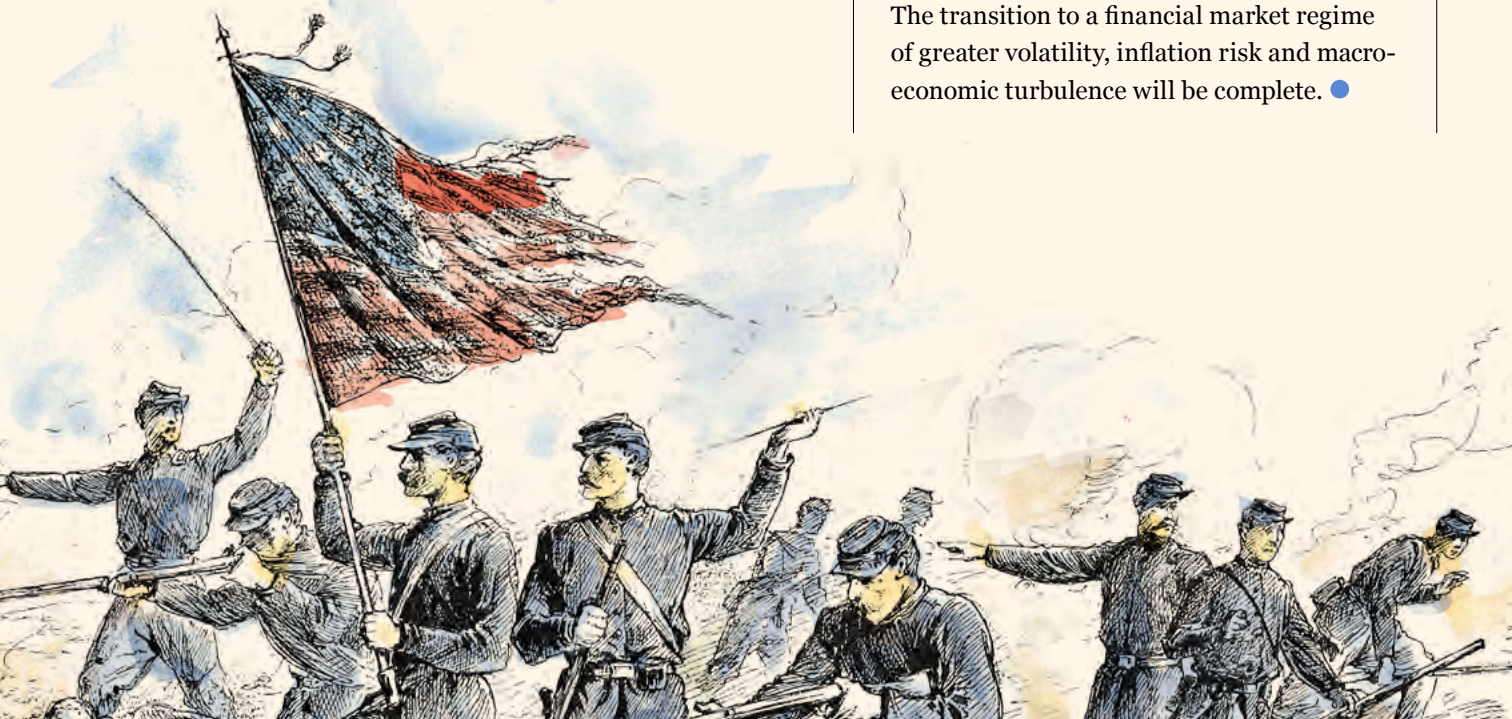
“The monetary cavalry will arrive, limiting the dangers for Main Street, but it won't arrive soon enough to save Wall Street in this cycle.”

they “will keep policy restrictive” until the job is done. But other than the brutal tightening cycle in 1981, the Fed has never kept policy restrictive for some time.

Easing cycles tend to begin a few months after the peak in policy rates, as much because politics demands it as because economic conditions warrant it. The lag in this cycle will be somewhat longer than others, which is the main reason to fear an air pocket. But the unique political circumstances that made it possible to extinguish inflation in 1980-82 simply do not exist today. We doubt any of the major central banks will be able to resist the siren call of monetary largesse once the political elite has started fighting recessionary fires.

The monetary cavalry will arrive, limiting the dangers for Main Street, but it won't arrive soon enough to save Wall Street in this cycle.

So the stage is set for a recession that is short and shallow but accompanied by a nasty bear market. From which will emerge an inflationary post-recession recovery. The transition to a financial market regime of greater volatility, inflation risk and macro-economic turbulence will be complete. ●



THE GREAT WEALTH

ILLUSION

THE
LEVITATING
MARKETS



THE
AMAZING
DIVIDING
BOOM &
BUST



THE
SENSATIONAL
PSYCHIC
MARKET



DEATH
DEFYING
TECHNOLOGY



HARRY HOUDINI WAS A MASTER OF DECEPTION. HE MYSTIFIED CROWDS WITH HIS DEATH-DEFYING ROUTINES, APPEARING TO FLOUT THE LAWS OF NATURE. From 1891, Houdini traded on the illusion of immortality - until his death in 1926. Today, in the theatre of financial markets, we remain just as beguiled by the power of illusions. And there is one investors should pay particular attention to - the bezzle.



JASMINE YEO
Investment Manager

ECONOMIST AND HISTORIAN JOHN KENNETH GALBRAITH DESCRIBED A "PERIOD DURING WHICH AN EMBEZZLER BENEFITS FROM STOLEN MONEY, BUT THE VICTIM DOES NOT KNOW HE HAS LOST IT."¹ In this time, there is a net increase in 'psychic wealth'. The bezzle is the amount by which they collectively feel better off, between the creation and the destruction of the illusion.

Think of the bezzle another way. Imagine you have a chocolate bar stored in your kitchen cupboard. You scurry home excited, only to find that someone else has snaffled it without telling you. Until that moment, both

“The bezzle is the amount by which they collectively feel better off, between the creation and the destruction of the illusion.”



you and the perpetrator had a warm fuzzy glow of endorphins and anticipation but, for one of you, it was entirely illusory.

And the bezzle isn't confined to larceny. Charlie Munger, Vice Chairman of Berkshire Hathaway, described a functionally equivalent bezzle – or 'febezzle' – the psychic wealth that can be created via legally appropriated money. He defined this as asset values temporarily exceeding their real economic utility. Thus, a divergence occurs between reported (market) and fundamental values. Whereas Houdini's magic drew gasps of delight, illusions in financial markets can come with ruinous consequences.

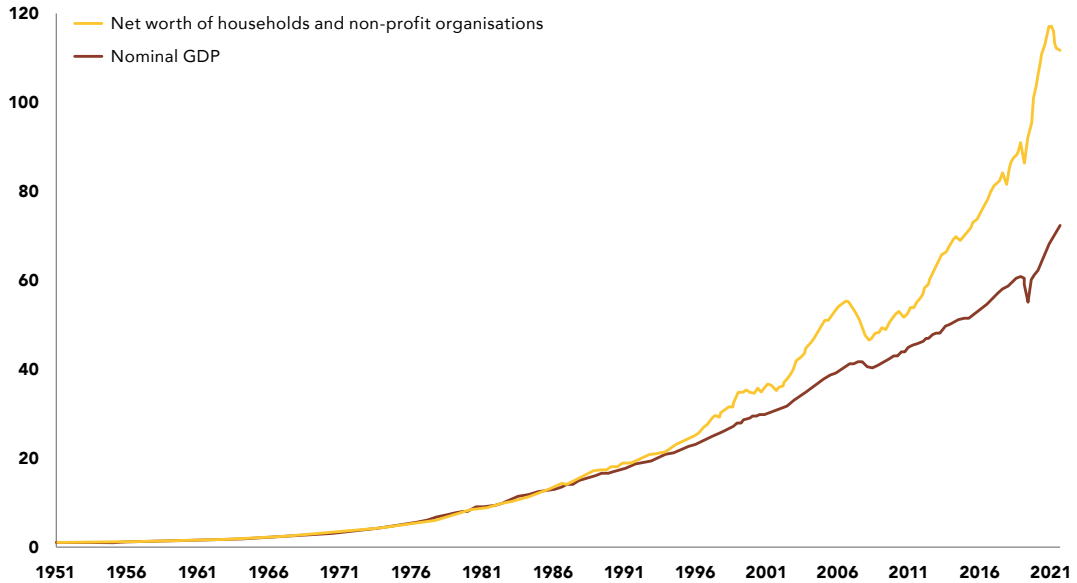
WHAT YOU OWN VERSUS WHAT YOU MAKE

From the 1950s until the early 1990s, the fundamental value of the US economy (measured by GDP) was roughly equal to American households' net worth (Figure 1). Wall Street (in yellow) accurately reflected the productive value of Main Street (in brown).

Since then, asset prices have diverged from their underlying economic utility, sending 'psychic wealth' to record highs. But how can net worth so materially outstrip the productive capacity of the economy? How can you be worth more than you produce?

Forty years of globalisation brought us cheap goods, cheap energy, cheap labour. These forces kept inflation low, pinned interest rates and risk premiums to the floor and ultimately made capital inexpensive. Borrow more, spend more, grow more.

Figure 1 US HOUSEHOLD NET WORTH VERSUS US GDP



Source: Bloomberg, Data to July 2022

The result was a golden era for asset owners, and the rise of portfolio values created a substantial wealth effect. After all, investors' behaviour tends to reflect the value of their portfolios.

PSYCHIC WEALTH, REAL LIABILITIES

The true cost of the illusion is only exposed when the liabilities of the debt which powered the illusion become due. This is unlikely to happen overnight.

Market sell-offs can make a dent in households' net worth, but the scale of the correction required for asset prices to align with economic value is of a magnitude beyond even the most bearish contemplation.

“Asset prices have diverged from their underlying economic utility, sending ‘psychic wealth’ to record highs.”

Policymakers' attempts to close the gap by stimulating economic growth have been unsuccessful. In fact, fiscal and monetary expansion in response to the pandemic stimulated asset prices considerably more than it did economic output.

Magicians never like to reveal the truth behind their tricks. If the bezzle is to be corrected, we think the mechanism will be more subtle. Asset owners will eventually

pay for illusory wealth via financial repression, as the rate of inflation stays above the rate of interest and gradually erodes the mounds of capital built up over the past half century.

TRICKS TODAY

Magic also occurs at the microeconomic level. One need look no further than the technology sector for further evidence of the bezzle at play.

Companies like Uber and Deliveroo were loss-making for well over a decade, but traded at rich valuations. Investors were willing to pay up for

these businesses given the promise of future growth. But rising interest rates have closed the book on the free money era. No longer are investors able or willing to flood companies with capital in order to grow their market share. These companies can't afford to keep prices artificially low, and millennials are discovering that their lifestyles are no longer being subsidised by growth-seeking investors.

Light regulation can widen the scope of the bezzle, perhaps nowhere more so than in crypto land. Last year's implosion of FTX – one of the highest-profile crypto exchanges – made billions of dollars of psychic



BEGINNING OF TRICK

wealth vanish in a puff of smoke. Will all cryptocurrency wealth prove illusory? On that, the jury is (quite literally) out.

As public markets crashed last year, valuations in private markets held firm. But is there more to this stability than meets the eye? Private assets are currently valued at a record premium to their public counterparts, but are they immune to recessionary fears or the effects of tight monetary conditions? Unlikely – they exist, after all, in the same economic reality. Rather, private equity houses have yet to mark down the values of their assets to reflect the prices others are willing to pay. So are their fees, collected in cold hard cash, based on an imaginary valuation?

REVELATION

Perhaps it's all part of the same trick. The bezzle isn't necessarily a fraud or Ponzi scheme.

It simply describes the accumulation of wealth which – when economic reality catches up – proves illusory. A bezzle becomes insidious or dangerous when imagined wealth is used as collateral for real world liabilities.

As John Stuart Mill put it: "Panics do not destroy capital; they merely reveal the extent to which it has been previously destroyed by its betrayal into hopelessly unproductive works."

Sadly, when the macroeconomic bezzle is revealed, we will all have to absorb its cost, through a combination of higher taxes, inflation and financial repression. Unlike for Houdini, there may be no miraculous escape. ●



ENDING OF TRICK



The disorder of the phoenix

CLARENCE HATRY WAS A DRIVEN BUT RECKLESS COMPANY PROMOTER WHOSE FINANCIAL CHICANERY ENDED IN A SPECTACULAR BANKRUPTCY, RATTLING MARKETS JUST BEFORE THE GREAT CRASH OF 1929. His punishment was swift and severe, but Hatry was remarkably resilient and ultimately found redemption – as a bookseller with a royal warrant.



HANNAH NAIRN
Investment Associate

HATRY'S STORY BEGINS – AS IT WAS TO CONTINUE – WITH CHAOS AND RENEWAL. His father, Julius, was a Jewish emigrant from Lorraine, who fled war and persecution in his homeland and arrived in England in 1871.¹

Julius was a hatmaker, and Hatry's hattery began producing silk top hats, the essential male status symbol in Victorian England. The wealthy émigré communities in London took to the toppers, and his business prospered. He married, was granted British citizenship and moved to affluent Belsize Park where, in 1888, Clarence was born.

INHERITING THE WIND

Yet the Hatrys' fortune soon ran thin. The fashion for silk toppers turned in favour of cheaper, more practical styles. When Julius died suddenly in 1907, the ailing family business passed to Clarence, then barely an adult, and his brother Gerald. Within three years, Gerald absconded, leaving Clarence with sole responsibility.

Clarence struggled in vain to revive his father's business. After taking out an illegitimate loan from comen, Hatry and his mother were declared bankrupt and lost their Belsize Park home. The family business failed soon after.

This sudden loss of hard-won status kindled in Clarence a lifelong desire to restore the family's fortunes. The financial sector would provide the arena.

“Some migrants crossed the Atlantic, only to be refused entry at Ellis Island. Hatry's eureka moment: this was an insurable risk.”

THE SHARK ASCENDING

Hatry entered the world of insurance after a chance encounter with a successful broker, Deighton Patmore. Working for Patmore's company, Hatry soon gained a reputation as an innovative problem solver. But his hard work was not limited to his professional life. Hatry's office was near the Cavendish Hotel, the 'room where it happened' for high society, and Hatry networked with zeal to ingratiate himself.

Hatry again became wealthy, and this opened up new opportunities. One such played to Hatry's heritage. Before the First World War, there was a wave of emigration from Eastern Europe to the United States. But some migrants crossed the Atlantic, only to be refused entry at Ellis Island. Hatry's eureka moment: this was an insurable risk. He devised an insurance policy to cover the cost of return travel for migrants who had been rejected. The creation and sale of the Union Emigrants Association marked the start of the next phase of Hatry's career: as a company promoter.

Company promoters operated in the middle ground between today's investment banker and venture capitalist. They conceived new ideas for companies, raised cash from investors and managed flotations. But the UK stockmarket was far more lightly regulated than its European counterparts, with little transparency into companies' finances. That gave promoters numerous opportunities to "palm off something unsound on the public", as one admitted.²

OH, WHAT A LOVELY WAR!

The outbreak of the First World War in 1914 brought an entirely new opportunity set for Hatry, who had secured an exemption from active service on medical grounds. Wartime financial controls made it difficult to form new companies, so Hatry turned to acquisitions. In December 1916, Hatry bought the Commercial Bank of London, which would be the cornerstone of his promotion enterprise. He proved adept at identifying future beneficiaries of the post-war environment. Hatry also led a new wave of industry amalgamations, combining groups of disparate businesses into one company, which created even greater opacity for investors. Leaping frenziedly from one successful promotion to the next, he amassed a sizeable fortune.

Which he was not shy of displaying, ostentatiously adopting all the fashions and pursuits of the British upper class. “Hatry was so flamboyant it was said that he even had the bottom of his shoes polished.”³ His mega-yacht, *Westward*, was reportedly the fastest racer of its time. Hatry and his family settled in Mayfair, but also kept a stable of racehorses in the country. However, one prize remained beyond his grasp: a title. Hatry shamelessly used his network to campaign for a baronetcy, but that proved a step too far, even for then Prime Minister Lloyd George.

THE WINDS OF CHANGE

At the start of the 1920s, economic conditions turned more challenging. Mainland Europe remained impoverished by the war. In the UK, inflation took hold, necessitating higher interest rates. By mid-1921, the country found itself in a deep recession.

Hatry’s businesses were not immune. The Commercial Bank’s difficulties were exacerbated by his exuberant profit predictions and overcapitalisation of its businesses. As profits slackened and dividends were cancelled, investors began to liquidate holdings in Hatry’s companies. In 1923, the Commercial Bank collapsed. For the second time, Hatry found himself in professional disarray.

However, he was far from finished. By 1925, the economy was in better shape, and Hatry rose from the ashes like a financial phoenix. He persuaded some bullish investors to give him £100,000 to set up a new company, the Aylesbury Trust, which enabled Hatry to launch a new wave of promotion and amalgamation.

SUSPICIOUS MINDS

Not all of the financial community were supportive. Hatry’s activities aroused the suspicion of Montagu Norman, the Governor of the Bank of England, who would ultimately prove instrumental in Hatry’s downfall. Norman distrusted

Hatry’s activities in general, but particularly disliked his undercutting of the network of incumbent stockbrokers.

Unfazed by Norman’s disapproval, Hatry embarked on some of his biggest projects as the economy started to boom, constructing a house of cards, thanks to his extraordinary ability to keep attracting new



capital from investors. He created a national group of department stores, the Drapery Trust, which he sold to Debenhams in 1927.

At the time, technology companies were a hit among investors on both sides of the Atlantic. For example, shares in radio and electronics company RCA rose tenfold in the later 1920s. Taking advantage of this enthusiasm, in 1928 Hatry floated the Photomaton Group, which produced and distributed photobooths.

But Clarence had not learnt the lessons of the immediate post-war years: the investments he promoted were still based on unattainably high profit projections and the businesses were overcapitalised.

MONEY'S TOO TIGHT TO MENTION

The time bomb was ticking. Earnings reports successively disappointed, and the share prices of the stocks in which Hatry retained a stake continued to fall. Rather than retrench and focus on business recovery, Hatry continued to play a game of pecuniary snakes and ladders in his search for cash.

A temporary reprieve was provided by an old friend. In 1925, Hatry had assisted in raising funds for the Borough of Wakefield, and the town clerk, Abram Allibone, returned in 1928 for further assistance. Hatry convinced Allibone not to postpone the proposed bond issue until the next year, when the funds would be needed. Instead, he recommended the council issue the debt immediately and leave the funds with Hatry to invest on its behalf. Hatry had effectively got himself a desperately needed one year loan.

“Rather than retrench and focus on business recovery, Hatry continued to play a game of pecuniary snakes and ladders in his search for cash.”

PUSHING UP THE ANTE

Undaunted, Hatry embarked on his biggest project yet, the rationalisation of the British steel industry. He sought to form a syndicate to provide the upfront capital needed to acquire companies for restructure. At the same time, he needed to persuade companies to become founding members of the combine. Hatry's proposals initially fell on deaf ears, but eventually United Steel showed interest.

Two options were provided to existing United Steel shareholders: to be paid in cash or in shares of the future combine. Faced with the characteristically scant information provided by Hatry and an obviously risky project, most opted for cash – a further financial burden for Hatry. Montagu Norman complicated matters, by warning potential financiers of the unreliability of Hatry and his schemes. As if that wasn't bad enough, the General Election in May 1929 brought to power a new Labour government, creating jitters in the City.

Hatry sought to reassure the largest participants in his scheme, but he found the audience much less receptive in this new environment. Unwilling to admit failure, Hatry and his associates set about finding cash from elsewhere.



DECLINE...

The carousel was spinning at dizzying speed. Investors' concerns intensified when he asked for extensions on existing loans. With Montagu's warnings ringing in bankers' ears, Hatry could not source liquidity. Soon, bankers started selling shares in Photomaton, which were held as security. This pushed down the share price, creating a further drain on Hatry's resources. The due date for the Wakefield loan was looming, and the demands of Hatry's creditors were growing.

Hatry's descent into criminality was in some ways a natural step, the last option to prevent the collapse of his entire project. He and his associates faked receipts for cash from investors and used them as collateral to obtain additional loans. Perhaps he viewed these as a temporary measure.

But Hatry would not have the chance to rectify his wrongs. A last-ditch effort to obtain funds in Paris was picked up by the press, prompting a further sale of Photomaton shares, withdrawals from remaining backers and the announcement of an investigation into Hatry's business.

...AND FALL

Icarus had flown too close to the sun. In mid-September 1929, with scant warning for the general public, Hatry announced the group was insolvent. He admitted the use of fraudulent notes, for which he took full responsibility.

The Hatry group collapsed spectacularly, on the scale of the Enron scandal of modern times.⁴ Some have even suggested that it was one of the proximate causes of the Great Crash of Wall Street the following month. "In the lore of 1929, the unmasking of Hatry in London is supposed to have struck a sharp blow to confidence in New York."⁵

Hatry's part in the crash should not be overstated: a massive speculative bubble had built up over a decade, and its collapse was inevitable. But his downfall certainly provides a cautionary tale of the dangers of financial excess and the depths individuals will plumb in seeking to avoid exposure and catastrophe.

At his sentencing in January 1930, his actions were described as "the most appalling frauds that have ever disfigured the commercial reputation of this country."⁶ Hatry was sentenced to 14 years in prison, with two of hard labour. Justice was swifter – and more punitive – in those days.

HATRY RIDES AGAIN

Hatry was nothing if not resilient. He served nine years of his sentence, ending up as prison librarian. On his release, he put this newly acquired expertise to use in classic Hatry style. He bought Hatchards, England's oldest bookshop, for £6,000. Despite the onset of another world war and his own advancing years, he managed to turn round the ailing business: Hatchards remains a British institution to this day. Once again, Hatry had restored his fortunes – and, this time, there would be no reversal. ●

4 Ibid

5 Galbraith (1955), *The Great Crash 1929*

6 Robb, *White-Collar Crime in Modern England*

Book Corner

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

WHAT WE OWE THE FUTURE

William MacAskill

PAGE 129

THE CHECKLIST MANIFESTO

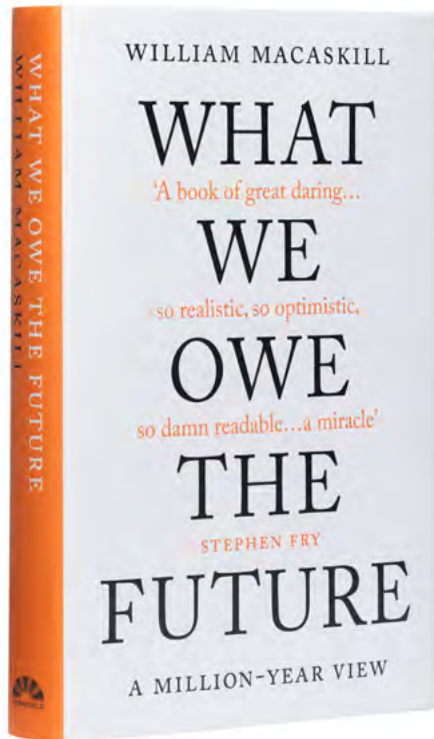
Atul Gawande

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THE OUTSIDERS

William N Thorndike, Jr

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WHAT WE OWE THE FUTURE

William MacAskill

BASIC BOOKS, ONEWORLD PUBLICATIONS, 2022

Living as ancients

AS A YOUNG GIRL, I LOVED TO VISIT THE ASSYRIAN GALLERIES IN THE BRITISH MUSEUM. I would stand beguiled beneath the colossal winged statues, looking up at the curly carved beards and wondering what those pupilless stone eyes had witnessed through the years. The ancient world was present and it was tangible. I thought a lot about the long gone people who lived in Nimrud in ancient Mesopotamia (modern Iraq).

For future generations we will be the ancients. How ought we to live if our moral imperative is to create and pass along as vibrant a world as possible? What if a core purpose is to ensure that future generations flourish? Humanity may be in its infancy – but only provided we make sound moral decisions, seeing ourselves as trustees of civilisation for future generations.

As William MacAskill makes clear in this lively and engaging work of moral philosophy, “Future people count. There

could be a lot of them. We can make their lives go better. This is the case for longtermism in a nutshell.”

MacAskill, an associate professor of philosophy at the University of Oxford and one of the principal proponents of the longtermist school, argues that we live in an unusual time which gives us an outsized opportunity to make a difference for the future. Given the unsustainable rate of change and the fact that we are uncommonly connected to each other, we are at a point of plasticity where we have a chance to improve the values that will guide the behaviour of generations to come. Even if this future world will be very different to our own in ways we cannot predict, we can be confident that those who follow us will take better actions if we improve our moral values today.

A FLEETING OPPORTUNITY

MacAskill cautions that this plasticity is likely to harden, perhaps in relatively short order. If so, how do we seize this chance to enhance our value set? How do we do everything we can to create a thriving world? Crucially, how do we safeguard civilisation?

The read-across to the climate change challenge is clear, and MacAskill’s approach is often intriguing. For example, he argues for retaining access to fossil fuels so that humanity can rebuild more readily should civilisation collapse. But the book also explores responses to the challenges posed by artificial intelligence, engineered pathogens, economic stagnation, Great Power war and nuclear attack.

For a book which doesn’t shy away from the precariousness of human existence and calls on us to remember our responsibility for ensuring good outcomes for the future, *What We Owe the Future* remains enormously uplifting. Like Hans Rosling’s *Factfulness* and Rutger Bregman’s *Humankind: A Hopeful History*, MacAskill’s work reminds us that, despite the serious challenges of this moment in history, things are looking up for us as a species. Longtermism is a positive endeavour we can all contribute to.

“ We live in an unusual time which gives us an outsized opportunity to make a difference for the future.”

“ Because if not you, who? And if not now, when? ”

A PRACTICAL APPROACH

But how? MacAskill suggests this framework

1. Take actions that we can be comparatively confident are good.
2. Try and increase the number of options open to us.
3. Try to learn more.

Use this framework to influence which priorities to focus on, choose the problems which are most pressing and look particularly for opportunities in neglected areas. Crucially, act with impact. For MacAskill, the most impactful things to do include donating to effective non-profit organisations, espousing political activism and spreading good ideas. He emphasises the importance of doing good collectively. During the height of the pandemic, we craved connection, creatively used technology to recreate community and expressed our appreciation for those who battled to keep us safe. Now the covid storm has passed, there seems to be little public discussion about how to reshape civil society to keep us positively connected.

A JOB TO DO

Perhaps the last place I expected this ambitious sweep of human experience to finish was careers advice. But, in a work often as practical as it is scholarly, MacAskill reminds us that the most

important decision for our lifetime's impact is our choice of career. He suggests that a longtermist's priorities when choosing a career would be well rooted in learning, building options and doing good.

What has particularly remained with me from this book is not just its compelling positivity, but also its clarity. The deep complexity of the crunch issues of contemporary society could be bewildering. The sheer notion of a long-term future is almost dizzying to comprehend. In the light of such high-stakes decision making, we could experience paralysis. What MacAskill offers are practical frameworks equipping us to walk positively towards our future challenges “because if not you, who? And if not now, when?”



KATIE SMITH

General Counsel

THE CHECKLIST MANIFESTO

Atul Gawande

METROPOLITAN BOOKS, 2009

Cultural evolution

CORPORATE CULTURE IS DIFFICULT TO DEFINE. And even more difficult to change. Any organisation's culture is shaped by the actions and behaviour of the individuals within it. Individuals who are fallible, unpredictable and irrational. As a result, cultures are complex and multi-dimensional organisms which are frequently unresponsive or hostile to external influences.

To change a culture, you must first change the individuals' behaviour. This book explores how a simple system of checklists can transform the way people work together.

Gawande saw how pilots use checklists to mitigate risk and improve flight safety. He decided to apply it to another life and death situation, his own professional field of surgery. The results were astounding. Checklists made individuals more accountable, divided labour more efficiently



and allocated tasks in the operating theatre to those best equipped to complete them. Although his focus is on medicine, Gawande goes on to show how the introduction of checklists can drastically reduce the number of errors across a range of disciplines, from finance to construction.

CULTURAL SHIFTS

Whilst it may make intuitive sense that checklists would improve operational procedures, ensuring no step is omitted, Gawande's ideas have real value at the organisational level and can be instructive for leaders in all industries and institutions. The checklist method can counteract the increasingly prevalent 'hero culture', with its assumption that 90% of the most valuable work is driven by just 10% of a company's workforce. By placing greater focus on the

“ The checklist legitimised asking questions, irrespective of the organisation’s traditional hierarchy.”

team, the checklist approach increases the diversity of skills which feed into a given process. This both improves short-term outcomes and highlights capabilities which may have otherwise been overlooked and may be valuable for future tasks.

Intriguingly, when surveyed, only 20% of medical staff said checklists helped them to carry out their jobs. However, 93% said the checklist method would be beneficial for the patient. And herein lies the genius of the approach.

Individually, medical staff thought of the checklist method in terms of its practical applications, such as ensuring no step in a process is forgotten. But asking the question from the patient’s perspective reveals an acknowledgement of a subtle shift in culture.

CHALLENGING THE HIERARCHY

Within the hospital culture, nurses are often considered less important than surgeons, because surgeons perform the actual operations. Gawande found that nurses believed themselves to be less skilled than the surgeons. So they were unlikely to question a surgeon even if they thought a mistake was imminent. The culture made no room for challenge or the expression of alternative opinions.

But, when nurses were put in charge of the checklist, they were given the authority to challenge the surgeons.

The checklist legitimised asking questions, irrespective of the organisation’s traditional hierarchy. It became a means of empowerment, whereby individuals could be comfortable expressing their opinion.

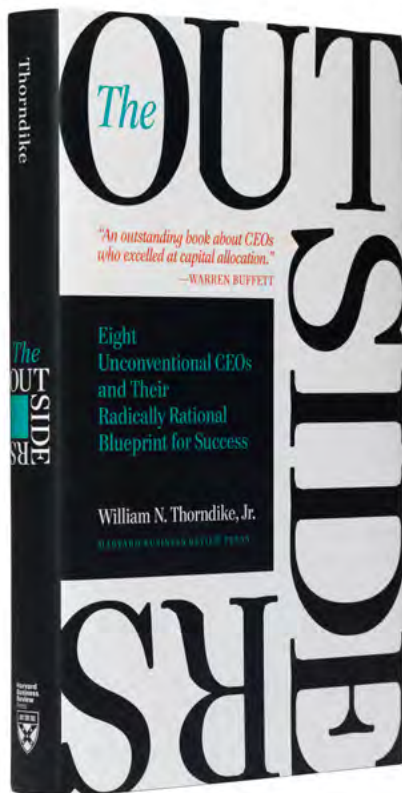
So the introduction of checklists, which may seem a trivial change, can not only improve performance but also transform behaviours and an organisation’s whole culture.

As the Dalai Lama once said, “Anyone who believes that small things cannot make a difference has never spent a night in a hotel room with a mosquito.”



MICHAEL GOWER

Chief Financial Officer

THE OUTSIDERS*William N Thorndike, Jr***HARVARD BUSINESS REVIEW PRESS, 2012**

Allocation, allocation, allocation

He sees two key roles for the chief executives of a company: management of operations; and allocation of capital. His observation is that CEOs focus their energy disproportionately on the former.

This makes sense as CEOs usually get the top job because of their success in lower level management roles, where capital allocation is less important. But, for Thorndike, the hallmark of exceptional company leadership is the delivery of long-term returns for shareholders, and this can only come from quality capital allocation.

The Outsiders features the stories of eight CEOs, each of whom met two simple criteria. First, their companies' share price returns materially outperformed their peers. And second, they beat Jack Welch's record of returns set during his tenure at General Electric.

The executives came from different walks of life, and each was unconventional in their own way. Bill Anders was the lunar module pilot on Apollo 8 before running General

THERE'S AN OLD JOKE WHICH SAYS YOU ONLY NEED TO READ TWO BOOKS TO LEARN THE SUM OF ALL KNOWLEDGE: What They Teach You at Harvard Business School and What They Don't Teach You at Harvard Business School.

Although *The Outsiders* might be published by that venerable institution, its place is squarely in the second canon – it's about what you don't get from an MBA. Thorndike's motive for writing this book is that “there are no courses on capital allocation at the top business schools.”

Dynamics, and Katharine Graham inherited the Washington Post from her father, Eugene Meyer, the fifth chairman of the Federal Reserve.

However, Thorndike doesn't focus on the traits or experience that made these individuals unique, but on what they had in common.

They were outsiders to the corporate world. All but one were new to their industries, and none had been a CEO before. Most lived away from the commercial hubbub of the Boston/New York corridor – Warren Buffett (Berkshire Hathaway) in Omaha and John Malone (Tele-Communications Inc) in Denver – which allowed them to think differently and independently, and to avoid the armies of bankers, consultants, lawyers and PR advisors who surround most C-suite executives.

However, the key similarity was their approach to company finance. The outsiders were united by a focus on per share value maximisation, not overall revenue growth or even profit growth.

This approach had a number of defining characteristics. They were not afraid to

sell or shut down significant parts of their businesses if insufficiently profitable – they would deliberately shrink the company to improve returns. And they viewed the corporate landscape through the lens of their own companies' shares. When their stock traded expensively, they would issue more to buy undervalued assets. Share buybacks were the benchmark against which to judge all other investments, and they would simply repurchase shares if there were no more attractive options.

These repurchases were not made to prop up stock prices or to offset option grants to executives, but because they were attractive investments.

This is in stark contrast to some of the financial engineering over recent years when corporations have conducted buybacks without reducing the share count. In effect, companies have been spending money simply to sterilise the shares issued to employees as stock-based compensation. Over the past ten years, Facebook parent

“The hallmark of exceptional company leadership is the delivery of long-term returns for shareholders, and this can only come from quality capital allocation.”

“ Perhaps the trick for investors is to find those who think like outsiders.”

Meta has spent just shy of \$100 billion on buybacks, but its shares outstanding have risen by over 12%.¹ Due to the collapse of Meta’s share price last year, the company had to authorise the issuance of an additional 425 million shares (16% of outstanding) to enable them to pay the same dollar value of stock-based compensation: the lower the shares go, the more of them they give away.

This isn’t the sort of return of capital for shareholders that drove the outsiders, but the enrichment of the C-suite by the back door.

Summarising the outsiders’ *modus operandi*, Thorndike notes “they disdained dividends, made disciplined (occasionally large) acquisitions, used leverage selectively, bought back lots of stock, minimised taxes, ran decentralised organisations, and focused on cash flow over reported net income”.

Elements of the book would give all but the most hard-nosed capitalists pause for thought. Cost-cutting and headcount reduction are celebrated, tax-minimisation lauded, and share buybacks praised as a productive use of capital. But from the starting point of Milton Friedman’s doctrine – that the goal of a firm is to maximise returns to shareholders – these are all logically consistent, and admirable, outcomes.

And Thorndike is right to focus on capital allocation, which remains a rare talent amongst even the most celebrated company executives. Recently, a colleague in Ruffer’s research team gave a copy of *The Outsiders* to the CEO of a large company who had tried (unsuccessfully) to make a potentially value-destructive acquisition. Perhaps the trick for investors is to find those who think like outsiders.



EDWARD ROE

Investment Manager

SPOT THE WINE



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Answers

SPOT THE JAMES BOND FILM - PAGE 3

- 1 DIAMONDS ARE FOREVER
- 2 MOONRAKER
- 3 OCTUPUSSY
- 4 GOLDENEYE
- 5 THE WORLD IS NOT ENOUGH

SPOT THE WINE - PAGE 137

- 1 MATEUS ROSE
- 2 CROZES HERMITAGE
- 3 MUSCAT
- 4 PROSECCO
- 5 BAROLO
- 6 CABERNET SAUVIGNON

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"If you pay magical prices,
don't expect a fairy-tale ending."

Alexander Chartres PAGE 8

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