

Praise for
*The End of the
Everything Bubble*

“Take a tour through Sandy Nairn’s well-curated, well-annotated financial picture gallery. The images should frighten you. Better still if they also catalyze prudent, wealth-saving action. A timely warning by an investor who knows whereof he speaks.”

– **James Grant**, editor of *Grant’s Interest Rate Observer*

“The scale of monetary and fiscal expansion in recent years has been staggering, and has been much more successful in creating a boom in asset prices than growth in the real economy. Sandy Nairn’s rigorous analysis of asset markets is compelling, and his conclusion that asset prices are set for a hard landing is persuasive.”

– **Lord Macpherson**, former Permanent Secretary to H M Treasury

“In this book, Sandy Nairn eloquently describes the contours of the vast moral hazard landscape in which we are enveloped. This highly readable account of our predicament begs the question, is this the moment for a fundamental breakdown of the post-Bretton Woods economic and financial settlement? He has thrown down the gauntlet to the governing authorities, the major central banks and to his fellow-professionals in the investment industry, challenging them to provide a credible alternative, and more reassuring, appraisal of the status quo.”

– **Peter Warburton**, director of Economic Perspectives Ltd
and author of *Debt and Delusion*

The End of the Everything Bubble

The End of the Everything Bubble

*Why \$75 trillion of investor
wealth is in mortal jeopardy*

Alasdair Nairn

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Harriman
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“ ‘Since we decided a few weeks ago to adopt the leaf as legal tender, we have, of course, all become immensely rich...But we have also,’ continued the management consultant, ‘run into a small inflation problem on account of the high level of leaf availability...So in order to obviate this problem,’ he continued, ‘and effectively revalue the leaf, we are about to embark on a massive defoliation campaign, and...er, burn down all the forests. I think you’ll all agree that’s a sensible move under the circumstances.’ The crowd seemed a little uncertain about this for a second or two until someone pointed out how much this would increase the value of the leaves in their pockets whereupon they let out whoops of delight and gave the management consultant a standing ovation.”

– Douglas Adams, *The Restaurant at the End of the Universe*
(Pan Books, 1980)

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About the Author

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Sandy graduated from the University of Strathclyde and has a PhD in economics from the University of Strathclyde/Scottish Business School. He is a CFA charterholder with

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In 2001, he published the first edition of the investment classic *Engines That Move Markets*, a historical study of how technological advances can lead to stock market booms and busts, with the updated second edition being published in 2018. He has won multiple performance awards for the management of global equity portfolios over his 37-year investment career. In 2012 he co-authored the book *Templeton's Way With Money* with Jonathan Davis.

For the avoidance of doubt, all opinions expressed in this book are the sole responsibility of the author, as are any errors or omissions.

Preface

ALTHOUGH INFREQUENT, PERIODS of financial excess are hardly unknown in modern experience. My generation has lived through two of the worst peacetime economic crises of modern times – the global inflation shock of the 1970s and the global banking crisis of 2008 – as well as two other notable but less severe recessions in 1989–90 and 1999–2000.

In all four episodes the stock market suffered a sharp decline and economic activity took a big hit. While there will always be cycles in the economy and in financial markets, their impact on people's livelihoods and wealth can be compounded if there is financial exuberance in the years preceding declines.

It appears obvious to me that another such period of exuberance is unfolding before our eyes.

When policymakers began responding to the global pandemic in 2020, the hope was that we could avoid a repeat of damaging and avoidable market crashes witnessed in 2000 and 2008, where rampant speculation and irresponsible lending contributed to 50% declines in stock market wealth. These episodes rightly bear comparison with the great financial crises of the more distant past – 1873, 1896, 1907 and 1929 among them.

It would be comforting to think the lessons of the past have been learned. It has been clear for some time, however, that they have not. Global leaders, both politicians and central bankers, have locked themselves into a policy box from which even an economic Houdini would struggle to escape. The effect has been to induce yet again the kind of widespread financial excess that has precipitated damaging declines in the past.

It means we are heading for another painful period in which financial losses will spread through the markets, not only causing losses for investors, but spilling over into the real economy. As an investor who believes history has much to teach us, I find the current complacency of politicians, bankers and many professional investors about this prospect deeply concerning.

Signs of excess are visible all around. You can see it in the price of Bitcoin, in the exalted levels of share prices, in the mania for online gambling, in any number of crazy ‘blind pool’ investments that nobody could sensibly want to own

– and, in fact, in the majority of investment assets, from classic cars to modern art.

These are clear echoes of the dangerous behaviour which preceded the great stock market crashes of the past. Many of these featured in my book, *Engines That Move Markets*,¹ a study of periods of technological boom and bust and their impact on financial markets, ranging from the early 19th century to the present day.

Much of the data used in the following pages refers to the US. This is not intended to suggest that the rest of the world is not equally important. Nor does it mean that when the cracks appear they will necessarily appear first in North America. The focus on the US is mainly to help present a consistent picture for the world's largest and most dynamic economy. It is partly also because it is where many of the signs of asset price excess are most evident.

The purpose of writing this analysis is to draw attention to the risks facing investors in today's world and to lay out some of the options open to those who are willing to act now to avoid future harm to their wealth. The right course of action will depend on which of a number of scenarios play out.

Of course, my assumptions and line of reasoning may be wrong. It could be that the world can muddle through for a little while longer. Yet history tells us that wishful thinking,

¹ Nairn, A., 2018. *Engines That Move Markets: Technology Investing from Railroads to the Internet and Beyond*. 2nd ed. Petersfield: Harriman House.

while good for morale, is rarely a productive approach in investment. The prudent will be taking remedial action today.

ALASDAIR NAIRN

Edinburgh, 2021

1.

*Exceptional
Times*

WE ARE LIVING through an extraordinary period that in many respects has no parallel in the history of financial markets. These are some of the striking features of current market conditions as we enter the new decade, 13 years on from the global financial crisis of 2008:

- Interest rates are the lowest they have been for centuries and perhaps, according to one respected authority,² the lowest they have been for 5,000 years.³
- Governments have borrowed more money and accumulated more debt than at any previous time in history – with the US, for example, scaling the heights of its World War II peak.
- Central banks have created money and added monetary stimulus since the end of the global financial crisis on a scale that is greater than anyone has seen – or even thought possible – before.

2 Haldane, A., 2015. *Stuck*, Milton Keynes, Open University.

3 Sylla, R. and Homer, S., 2013. *A History of Interest Rates*. Hoboken, N.J.: Wiley.

- Governments are now embarking on an unprecedented peacetime fiscal expansion in response to slowing economic growth and the shock of the Covid-19 coronavirus pandemic.
- Although it has never been tried before, and despite its evident risks, the scale of this combined monetary and fiscal stimulus nevertheless appears to be supported by consensus elite opinion.
- Owners of debt have shown themselves willing to lend money on riskier terms and to riskier ventures than has been considered prudent in the past.
- \$18 trillion, or over one quarter, of global investment-grade corporate bonds traded on negative nominal yields in October 2020, while the amount of sovereign debt selling on negative real yields exceeded \$31trn. The real yield on US Treasuries has been negative for most of the past two years.
- Stock market valuations are at extreme levels, between two and three standard deviations above the historical mean, and not far removed from the excesses that preceded the 1929 and 2000 stock market crashes.
- Numerous other examples of speculation and financial excess can be observed across many types of investment assets and in the behaviour of financial institutions and individuals alike. Bitcoin is a representative example, but there are many others.

It is only a question of when, not if, this period of high valuations and widespread speculation comes to a juddering halt. Looking back at past episodes when similar conditions applied, it seems extremely unlikely that the process of rectifying today's excesses can be anything but a painful one.

Not a new phenomenon

We have been here before. Periods of financial excess are easy to recognise, at least in retrospect. Typically they are named after their most salient characteristic. The 'Nifty Fifty' in the 1960s, Japanese real estate in the 1980s, the Asian crisis in the 1990s and the TMT (telecoms, media and technology) bubble in 2000 are some obvious examples. Sub-prime mortgage lending in the run-up to the global financial crisis of 2008 would be another.

A common feature of past crises is that governments – or, more recently, not-so-independent central banks – have been slow to react to the evidence of excessive risk-taking and asset-price inflation. In the famous words of a former chairman of the Federal Reserve, they fail to “take away the punch bowl” before the party gets out of hand. As a result, the hangover when it comes is longer and more painful than it might have been.

Periods of overvaluation are typically followed by a period of cleansing during which assets return to more normal

levels. The most damaging episodes of all are those which cause wider collateral damage by intensifying recessions and bringing down the price of other assets as well, not just those which precipitated the crisis.

The magnitude of the damage depends very much on the extent to which leverage has driven prices up. Debt is the booster rocket fuel that creates stock market bubbles and precipitates the worst market and economic declines. The rapid explosion in debt over the past decade is what makes the current situation so full of menace.

Although they may have ended in disaster, it would be a mistake to view past periods of financial excess solely as examples of collective lunacy. The journey from boom to bust often begins with legitimate logic. What then happens is that, as more and more investors buy into the argument, the logical trend slowly but surely intensifies until it reaches a point where the primary driver of rising prices ceases to be the original logic and the trend instead develops a momentum all of its own. The availability of cheap debt, itself sometimes the consequence of government policies conceived with quite a different objective in mind, compounds the problem.

A good example is the Japanese stock market and real estate bubble of the late 1980s. While the background was the growth of a successful and dynamic economy, the origins of the bubble lay in an international currency agreement, the Plaza Accord of 1985, which was designed to halt the

rapid appreciation of the dollar in the early 1980s in the aftermath of the Federal Reserve's high interest rate attack on inflation.

The policy was eminently successful in the sense that it led to a steady fall in the value of the dollar and a consequent strengthening of the yen, Japan's currency. The logical response of the Japanese authorities was to try and help the country's exporters by offsetting the currency appreciation with easy credit and low interest rates.

All that did, however, was send the valuations of real estate companies, banks and companies with real estate assets (such as railroads and companies with land in the Tokyo Bay area) soaring. At one stage it was estimated that the Imperial Palace in Tokyo was worth more than the entire state of California. Real estate in Tokyo was trading at a price per square foot 350× that of Manhattan. In 1988 the Australian embassy in Tokyo sold its tennis courts for A\$640 million.⁴

Although the overvaluation of Japanese assets was widely commented on at the time, it did not stop investors continuing to chase what seemed to be inexorable rises in the price of property and shares, often with money borrowed at dirt-cheap rates. One might think that professional investors, well aware of the stratospheric valuations, would have resisted the temptation to invest their clients' funds.

4 Fraser, A. and Coelle, A., 1988. Embassy sale nets \$640m. *Canberra Times*.

Sadly not.

Professional investors are judged on performance relative to a benchmark index. Japan was the largest component of this index and rising sharply. The career risk of lagging the benchmark index, the so called ‘curse of the index’ was significant. When career risk and investment risk face off, for most it is an unequal battle. Career risk prevails. This was true then and it remains so today.

It was not until 1992 that the debt-fuelled asset bubble finally burst, condemning the Japanese economy, saddled as it now was with mountains of debt and near-bankrupt banks, to two decades of slow economic growth. The Japanese stock market has yet to regain its highs of 30 years ago.

Although the causes are different, the parallels with today are obvious, with one added twist. Normally in such crises the excess is largely confined to a particular geography or sectors and there is only limited impact on other parts of the economy, rather than generalised across the whole set of asset classes.

Consequently, even when we have ‘bubbles’, there may still be opportunities for investors who are willing to go hunting for value in the unloved areas of the market that have been neglected because of investor focus on the fashionable sector of the day.

What is distinctive, indeed unique, this time round is that we are witnessing an explosive growth of debt and excessive speculation across almost the entire universe of investable

assets, not just in some particular sectors. The traditional defensive asset to which investors flee during crises is government bonds, but the bond market is at the epicentre of the looming crisis. With government borrowing at record peacetime levels and bond yields not far above zero, that traditional safety net is no longer there. For this reason the ‘everything bubble’ is an apposite description.

The heart of the problem

The root causes of periods of financial market excess are clearly many and varied, but in most instances low interest rates are one of the key factors underpinning asset-price inflation. Low interest rates are a common denominator in market bubbles and all too often cheap money, as we have seen, is the result of deliberate, but misguided and short-sighted, policymaking.

Is it the same this time? The answer is clearly *yes*. At the heart of the problem today is not just the fact that money has never been so cheap, but that policymakers, in both governments and central banks, have left themselves with little or no room to manoeuvre out of the trap they have set themselves by deliberately keeping the cost of money so low for so long.

The explanation for this state of affairs is not hard to find. It flows from the impact of the global financial crisis (GFC)

in 2008. The GFC, with its uncomfortable similarities to the years leading up to the Great Depression, elicited a policy response which set out, at all costs, to avoid a repeat of the 1930s.

In that narrow sense, policy has been a success. Since the GFC almost any sign of weakness in the world economy has been met with a strong reaction from monetary authorities across the globe. Through a mixture of interest-rate cuts and quantitative easing (QE), monetary stimulus has been applied on an unprecedented scale.

So, while many feared that the financial crisis would produce a slump, the world economy has continued to grow, albeit slowly. A rerun of the deflationary experience of the 1930s has been averted. Critics of the policy response argued that monetary policy was too loose and would inevitably lead to higher consumer-price inflation.

This was faulty analysis. In the event, the GFC response has so far had little impact on consumer prices. Inflation has been conspicuous by its absence and remains at or below the central banks' target rate of 2% per annum.

The troubling aspect of this, however, is that what began as a temporary policy response to avert a potential collapse of the global banking system has mutated over time into something very different. Over the course of the last decade, monetary stimulus – whether in the form of interest rate cuts or QE – has become an automatic response to any negative market signal, and the knowledge that this is the

case has, over time, become dangerously embedded in financial-market thinking.

The lack of inflation has encouraged central bankers to persevere with their easy policy stance, primarily because doing so appears to have no costs attached. We have moved into a world in which it is seen to be riskless for governments and businesses to increase the amount of debt they take on.

They are right in one sense: given how cheap money remains, the cost of servicing new and existing debt keeps falling. The ratio of government debt interest payments to GDP has paradoxically rarely been lower.

This is only so because we have what appear to be the lowest interest rates in 5,000 years of history. True, there may appear to be a degree of hyperbole in this statement, which originated from comments made by Andy Haldane, the then Chief Economist at the Bank of England:

“At a Parliamentary Committee hearing a few years ago I asserted, boldly, that global interest rates were at their lowest-ever levels. A wise colleague challenged me afterwards: ‘How do you know they weren’t lower in Babylonian times?’ Several exhausted research assistants later, I can report that, luckily, I was on safe ground. Interest rates appear to be lower than at any time in the past 5000 years.”⁵

5 Haldane, A., 2015. *Stuck*.

However, we do not need to refer as far back as Babylonian times for evidence. The Bank of England has also produced an 800-year record (figure 1). That interest rates are at, or around, historic lows is not in doubt.

But nor, crucially, is it an accident. The fear of a repeat of the Great Depression has resulted in a deliberate policy by the authorities to keep interest rates suppressed, a policy that has endured for more than 13 years, long after its initial rationale passed. For example, in 2015 Haldane argued that ‘dread risk’ – the emotional scarring of an event like the global financial crisis – may have contributed to the initial widespread sense of insecurity that required the anchoring of interest rates. Such events, he argued, “can exaggerate and prolong risk perceptions”.⁶

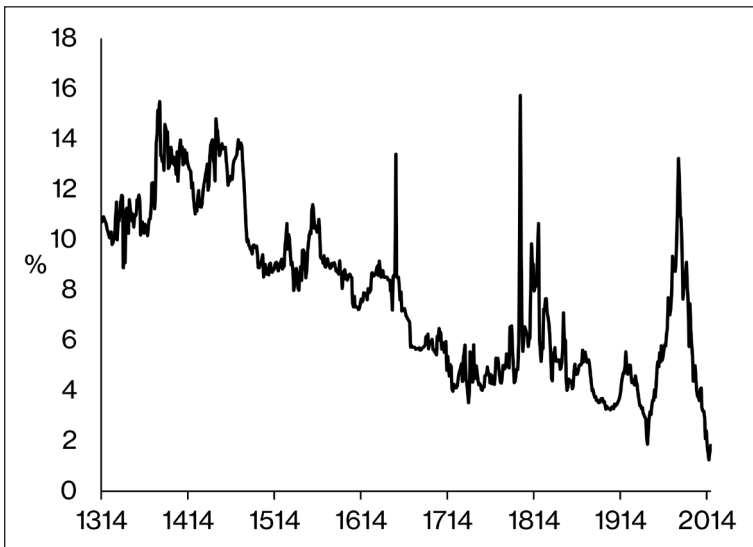
We are now six years further on from the time of his speech and conditions are different. Prior to the global coronavirus pandemic in early 2020, the risk of a repeat of the 1930s had manifestly receded even further – yet the policy remained unchanged. The pandemic may have introduced a new dread risk into the equation. We cannot know for certain whether central bankers would have started to cut back their monetary stimulus earlier had the virus not struck.

As it is, their immediate response to the pandemic was to cut interest rates again and relaunch QE on a massive scale. As before, the response successfully staved off another global depression. More than a year later, thanks to the

6 Haldane, A., 2015. *Stuck*.

development of several effective vaccines, it is clear that the global economy is well on the way to recovery and asset prices have rebounded strongly, with many stock markets hitting new all-time highs.

Figure 1: Short- and long-term interest rates



Source: GFD, Paul Schmelzing, 'Eight Centuries of Global Real interest Rates, R-G, and the "suprasecular" decline, 1311–2018,' Bank of England Staff Working Paper No. 845

Yet the suppression of interest rates continues. Thanks to the decline in bond yields, governments have so far been able repeatedly to refinance their expensive historic debt obligations at much lower rates of interest. As noted above, there appears to have been no penalty for taking on more

debt, however imprudent it might have been thought by earlier generations.

Bolstered by this, governments have gradually abandoned the austerity policies that they adopted to pay for the intervention in the immediate aftermath of the global financial crisis. At that time it was thought that it made little sense to believe that the global debt crisis could be solved by the addition of yet more debt. Yet that paradoxical outcome, it turns out, has become the new orthodoxy.

Far from cutting back their need for debt finance, governments have committed to a range of spending and investment measures on a scale not seen since the very different conditions of the 1930s. With the outbreak of the Covid pandemic in early 2020, and the severe economic slowdown it precipitated, the impulse to ramp up government spending has only intensified. The amount of public debt being issued has leapt commensurately.

Wider systemic factors

In the background meanwhile have been some important changes in the global economic environment that are creating new risks. A number of trends that have acted as deflationary forces since the 1990s appear to be on the point of reversing, raising the danger that the benign inflationary

conditions which have persisted for the past 30 years will soon be a thing of the past.

These trends have been positive for productivity improvements and economic growth until now, but they will increasingly start to act as headwinds to further economic advance.

Here are some of those headwinds:

- The world's population is ageing. In most major economies the dependency ratio – the number of those not of working age divided by the total working-age population – is worsening, meaning there are proportionately fewer workers to carry the burden of the economically inactive.
- The planet is warming. The threat of global warming requires a move away from fossil fuels and hydrocarbon-based activities. Whilst necessary, this will come at a financial cost in the medium term, even if the replacement technologies eventually drop in price.
- Migration flows are being inhibited by rising populism and political factors, as a result of which labour markets are no longer as freely and globally competitive as before.
- The flood of labour crossing borders after the fall of the Soviet Union, the expansion of the EU and the integration of China into the global economic system is now much more subdued.

- The productivity gains from rural-to-urban population movement and industrialisation in China (and Asia generally) will be much more limited in the future.
- The willingness of companies to rely on components and raw materials supplied by a single source is reversing, based on the realisation that having an extended supply chain without alternative suppliers carries serious strategic risks.

These powerful trends are also producing big changes in political behaviour. Faith in the free market is being replaced across the globe by support for ever greater government intervention – a trend that the pandemic has intensified. Recent experience has lent credibility to the idea that governments and central banks can fix most problems. This has not historically proved to be an effective approach to creating economic growth and profitability.

2.

*Richly Valued
Markets*

*Markets don't know
or don't care*

WHAT THIS ALL means is that the framework for pricing investment assets today is very different from the norm in previous financial history. Given the backdrop of high valuations and soaring debt, investors in both stock and bond markets should by rights be concerned. Yet that is not the picture you will gain from studying the performance of the two markets, which appear increasingly to be losing touch with reality.

Just as with Japan in the 1980s, the easy-money response to the global financial crisis has engendered huge momentum behind asset-price inflation. This is not necessarily illogical. At a theoretical level some form of 'risk-free' asset is needed to value financial assets. Typically government debt is used as the lowest default risk. In a world where the yield on this instrument has been suppressed for well over a decade, it should perhaps not be surprising that it has served to inflate all asset prices.

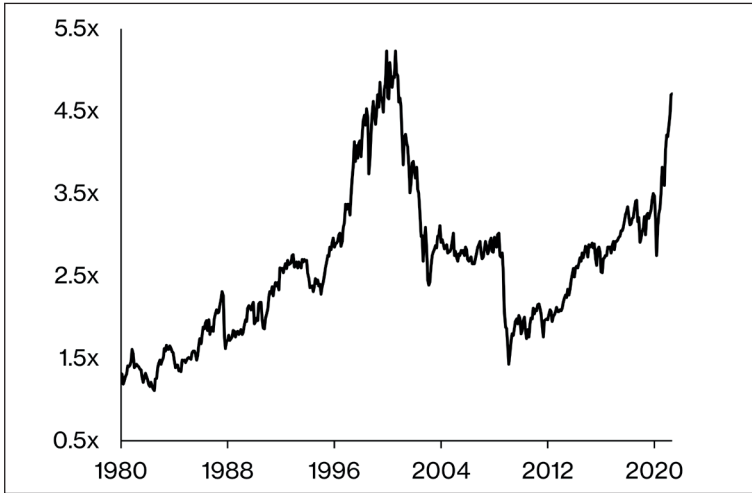
The combination of fiscal and monetary stimulus on a grand scale, accompanied by record-low interest rates, has created a combustible state of affairs. Noting the apparent willingness of policymakers to step in at the first sign of any market weakness to minimise losses, investors are throwing caution to the wind. It is hard to envisage a set of circumstances more likely to produce excessive risk-taking and unsustainable valuations in financial assets.

Stock markets

Valuations of leading stock markets are extremely elevated on virtually all conventional measures. Whether you are measuring price-to-book value, price-to-free cash flow, price-to-earnings, or Tobin's Q (which compares share prices to the replacement cost of assets) – all show high levels of valuation, well above historical norms.

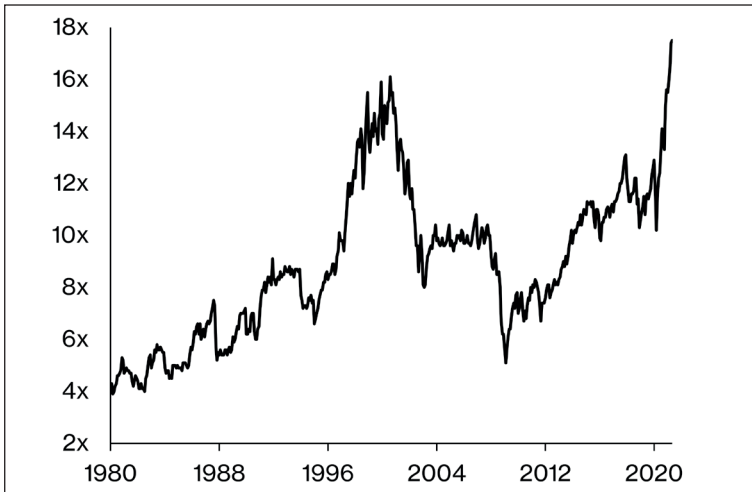
Figure 2: Valuations above historical norms

(a) US price-to-book ratio



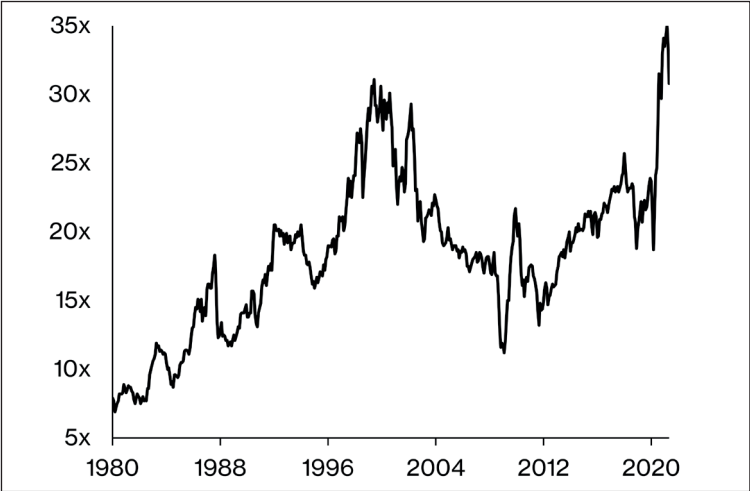
Source: Refinitiv Datastream, Federal Reserve

(b) US price-to-free cash flow ratio



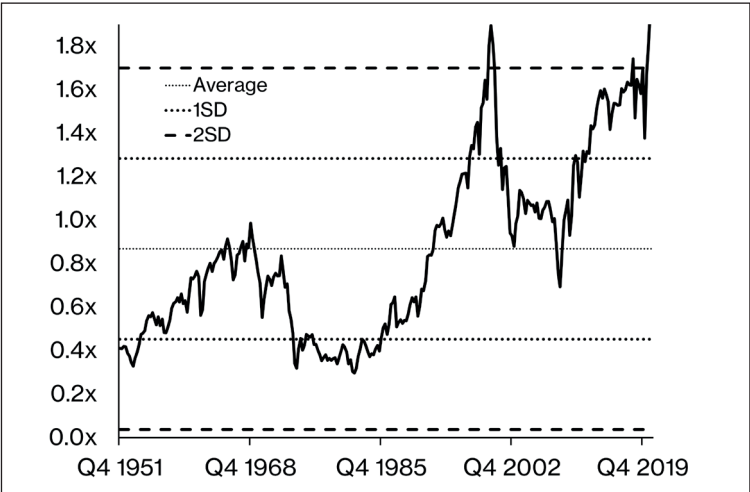
Source: Refinitiv Datastream

(c) US price/earnings ratio



Source: Refinitiv Datastream

(d) Tobin Q – United States



Source: Refinitiv Datastream

2. Richly Valued Markets

It is true that all individual metrics, by definition, only give a snapshot of how a market is being valued at a single point in time. That means the headline figures can be distorted by misleading short-term factors. For this reason, it is prudent and more helpful to use a measure which seeks to remove such distortions.

One popular measure of this kind is the cyclically adjusted price-to-earnings ratio (CAPE for short), designed by Professor Robert Shiller of Yale University. Strictly speaking, it is not cyclically adjusted, in the sense that the readings are adjusted for actual market and economic cycles. Rather it relies on using trailing ten-year average earnings as a proxy for the removal of cyclical factors when calculating the PE.

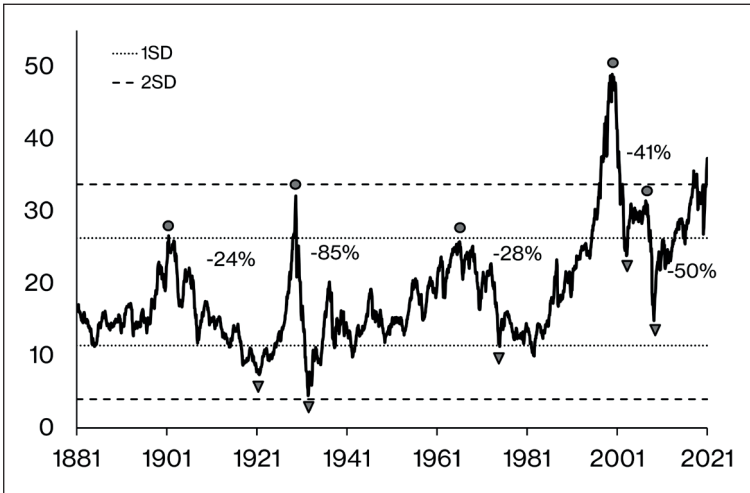
While a crude measure in that sense, it has the virtue of being both simple and having a long history that can be used to demonstrate its effectiveness as a guide to peaks and troughs in stock market performance. As figure 3 shows, the US CAPE valuation is at its second-highest level since modern stock market records began. This includes the 1929 peak. Just as importantly, it is currently more than two standard deviations above the historic average. The graph has been annotated to show the magnitudes of declines which followed each of the peaks. They do not make pleasant viewing.

The CAPE rating would only need to rise by 16% to become three standard deviations distant from the historic average. Past experience suggests this is a clear signal for investors

to beware. It was not so long ago that market collapses were being attributed to ‘three-standard-deviation’ events (i.e., events having a probability of 0.3% or less) as an excuse for our inability to see them coming. More evocative than three-standard-deviation events were references to ‘1,000-year floods, although with recent climatic events this would perhaps carry somewhat less resonance.

Such arguments or references are typically deployed to suggest that the root cause is an unforecastable event, absolving those involved from blame for failing to anticipate the outcome. Another favourite metaphor is the so-called unforecastable ‘black swan’ event. The reality is that any mental model which has simply been defined using data from the wrong periods, or is based on false assumptions, will naturally fail to predict what comes next. A three-standard-deviation event in valuation is a classic warning sign, yet today it is being treated as a sideshow.

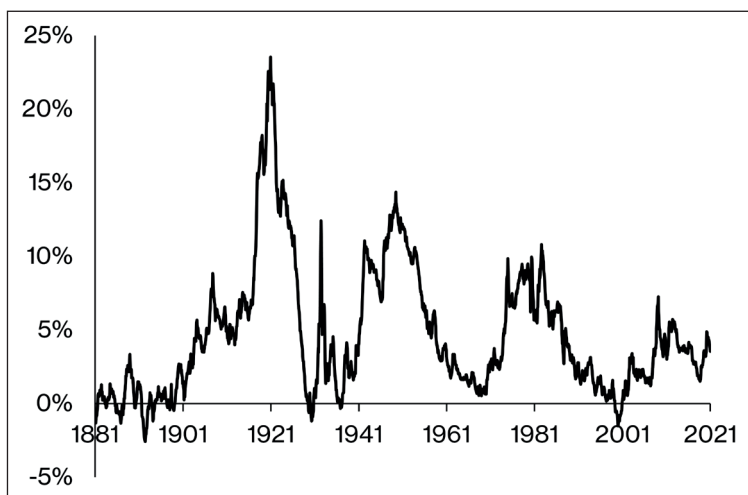
Figure 3: US cyclically-adjusted PE (1881–2021)



Source: Robert J. Shiller, econ.yale.edu, Refinitiv Datastream

Despite this apparent valuation anomaly, the great majority of investors and commentators are sanguine about the risk of markets coming down from their highs. This equanimity rests in part on a view that, although expensive on conventional measures, equities are not far out of line with historical experience when measured against the price of bonds.

Look, for example, at figure 4, which shows what Professor Shiller calls the 'excess equity yield', a measure that compares the earnings yield of companies in the stock market (their earnings as a percentage of their market capitalisation) to the ten-year US government bond yield.

Figure 4: Cyclically adjusted PE excess yield (1881–2021)

Source: Robert J. Shiller, econ.yale.edu

From this perspective, it is true that there does not appear to be too much to worry about. The current ‘excess equity yield’ appears somewhere in the middle of its historic range and is well below the levels that prevailed on this measure at the time of the great stock market crashes of 1929 and 2000.

If you are so minded, therefore, it is not that difficult to explain away the historically high CAPE by the fact that bond yields are currently the lowest they have been in the modern era. Whether it is wise to do so is another matter. A lot depends on whether or not you think that low bond yields are here to stay.

Bond markets

As figure 5 shows, it is certainly the case that headline nominal yields on bonds are extremely low and have been in long-term secular decline. Taking the yield on US Treasuries as the benchmark for movements in the cost of money, it is only too clear that interest rates have been on a declining trend ever since the early 1980s when Paul Volcker, the chairman of the Federal Reserve, was given a mandate to take decisive action to control the inflation that had devastated the global economy in the 1970s.

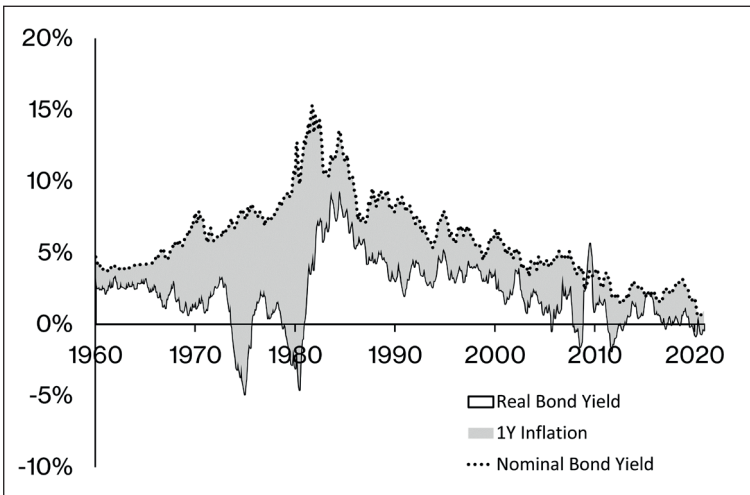
From a peak approaching 16%, the yield on the 10-year Treasury has declined to levels below 2% and until very recently appeared to be on track to fall below 0%, the so-called ‘zero lower bound’, something that has not been witnessed in modern times. There is no precedent for governments, even those with impeccable credit standing, being able to borrow money for anything but short periods at effectively no cost. It is not a sustainable state of affairs either in theory or in practice.

Yet in 2020, at the height of the markets’ panicked reaction to the news that Covid-19 had become a global pandemic, the nominal yield on the 10-year Treasury fell to just 0.5%, while most Treasuries with shorter maturities traded in negative territory. They have since recovered, but bond yields remain very low by historical standards; the 10-year Treasury yield was around 1.5% in mid-June 2021.

This dramatic picture becomes even more unusual if you look at the metric which is of even greater concern to bond investors: the real (i.e., inflation-adjusted) yield they are being offered. Real yields are calculated by subtracting the rate of inflation from the nominal yield. Unless they are positive, which they normally are, those who buy the bonds and hold them to maturity are guaranteed to be worse off, after allowing for inflation, when their money is repaid than when they originally invested.

Since the global financial crisis there have been several periods when the real yields on many government bonds around the world have been negative, an almost unprecedented state of affairs. At one point in 2020, while the average nominal bond yield remained in positive territory, more than a third of government debt around the globe was trading on a negative real yield, meaning that those who bought the debt, all other things being equal, would be guaranteed to see a gradual decline in their purchasing power.

Figure 5: US 10-year bond yields and inflation



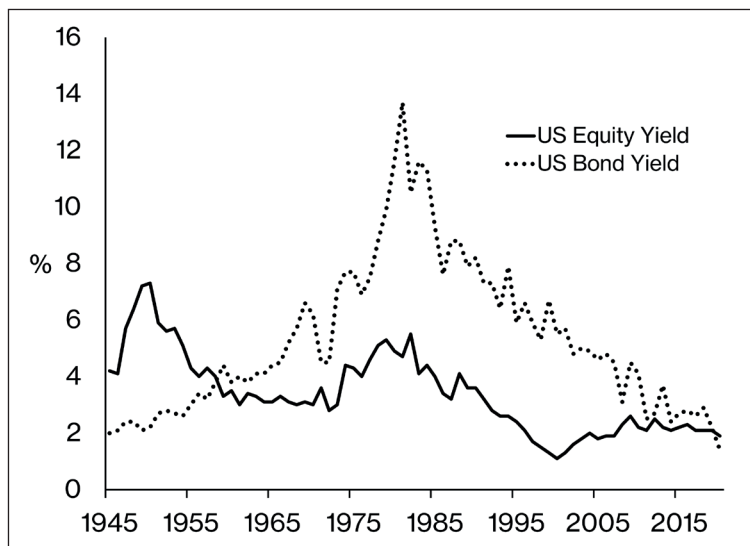
Source: Robert J. Shiller, econ.yale.edu

In fact, as figure 5 shows, real yields have been zero or below on several occasions since the global financial crisis. The last time this occurred was during the oil price crisis of the 1970s (not an encouraging precedent). Before that, the last time real yields were negative was after World War II, when, just like today, the authorities were deliberately suppressing interest rates to allow time for economic growth to return and help pay off the huge debts incurred in the war.

In both cases the inevitable outcome was large losses, both in nominal and real terms, for bond investors as the market eventually normalised. The problem for bond investors today is not only that bond yields at these very low levels mean that they provide next to no income, but that the

risks of capital losses rise significantly at the same time. Only if bond yields remain at the same level or continue to fall can losses be avoided.

Figure 6: Nominal US bond and equity yields



Source: Barclays Equity Gilt Study 2021

The obvious question to ask, then, is this: even if the high valuations being placed on stocks (and many other kinds of financial asset) are justified by the historically low cost of money, how sustainable are those current interest rates? If the argument is that the high price of stocks and many other assets is justified by such low bond yields, then logically those prices will not – and cannot – be sustained if and when yields start to rise.

The future for bonds

What explains this dramatic shift in the cost of money, and can it persist (as it needs to do to sustain asset prices where they are today)? Many explanations have been offered over the years. Mr Volcker's evident determination to eliminate inflation at whatever cost undoubtedly convinced a generation of professional investors that central banks could be relied upon to keep inflation under control.

Allied to that have been the powerful deflationary trends, mentioned above, that have helped drive inflation and future growth expectations lower across the world for the past 30 years. A combination of globalisation, demographic factors and technological advances have contributed to downward pressure on interest rates over a long period.

Another possible explanation lies in the changing relationship between savings and investment in the economy, which helps determine the market rate of interest. If there is a glut of savings, with too much money chasing too few investment opportunities, this could have the effect of keeping interest rates low.

This kind of analysis has been deployed by central bankers as an explanation for the persistent fall in interest rates.⁷

7 Minneapolisfed.org. 2021. Real Interest Rates over the Long Run | Federal Reserve Bank of Minneapolis. [online] Available at: www.minneapolisfed.org/article/2016/real-interest-rates-over-the-long-run

No less a figure than Ben Bernanke, then chairman of the Federal Reserve, argued in 2005 that a global savings glut helped to explain both the expansion of the US current account deficit and the low level of long-term real interest rates.⁸

In his view this too was one of the root causes of the global financial crisis, although that explanation does not square easily with the evidence of the widespread lending excesses that took place in the credit markets and which precipitated the sub-prime mortgage crisis, as graphically detailed by Michael Lewis in his book *The Big Short*.⁹

Why is this history important? The answer is that when asset prices are rising to new highs, as bond prices have continued to do over the last three decades, it is almost always possible to find some way to rationalise the outcome. These rationalisations tend to become more tortured as valuations rise and the signs of excess become more egregious.

This was just what we saw in the run up to the GFC, where so many obvious risks were ignored, subordinated to the view that either ‘the market’ was correct or, in the infamous words of the Citibank CEO Chuck Prince, everyone had an incentive to keep taking those risks:

8 Bernanke, B., 2005. Remarks by Governor Ben S. Bernanke, at the Sandridge Lecture, Virginia Association of Economists.

9 Lewis, M., 2010. *The Big Short: Inside the Doomsday Machine*. New York. W.W. Norton and Company.

“When the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you’ve got to get up and dance. We’re still dancing.”¹⁰

In other words, we know that investor behaviour can be driven as much by price action – the hard-to-resist temptation to join in a rising market – as by a rational view of the future and a calm assessment of the balance between risk and reward. It is a short step to go from saying that bond yields have kept on falling to convincing yourself that they must do so indefinitely, or at least as long as one’s career prospects demand.

It is hard to avoid the conclusion that this process is exactly what we are seeing again today. Now that bond yields are so close to zero, there is clearly little room for the downward trend to persist, yet the markets appear to be priced on the assumption that the trend will never reverse. That view is at best complacent and at worst downright dangerous.

¹⁰ Nakamoto, M. and Wighton, D., 2007. Citigroup chief stays bullish on buy-outs. *Financial Times*.