ISSUE 29 — AUGUST 2017

WWW.MASTERINVESTOR.CO.UK

MAGAZINE master investor

RESEARCH • ANALYSE • INVEST

THE UK'S NO.1 FREE INVESTMENT PUBLICATION

CLIMATE CHANGE

CURSE OR OPPORTUNITY?

PLUS...

CARILLION'S COLLAPSE

THE LESSONS FOR INVESTORS

SMALL CAPS, BIG POTENTIAL

THE BEST FUNDS AND TRUSTS TO GO SMALL

REITs VS BUY-TO-LET

WHICH ONE IS RIGHT FOR YOU?

FRONTIER MARKETS

THE WILD WEST OF INVESTMENT

WELCOME

Dear Reader,

Putting climate change onto the cover of an investment magazine was no easy decision. It remains one of the most contentious and divisive subjects on earth.

A 2016 YouGov survey found that out of 17 countries surveyed worldwide Britain is among the least concerned about climate change. The issue had a "share of concern" of 10.8%, two points behind the global average and above only the USA (9.2%) and Saudi Arabia (5.7%). Whatever you think about the subject, it's evident that the climate change movement has so far failed to convince the British public of its case. For the demographics of 40 years upwards, which makes up the core of our readership, the dismissive view of climate change is likely to be even more accentuated.

No doubt that is also because there are several levels to this debate.

Is there climate change at all? If there is, is it man-made or just a matter of natural fluctuations? Are the policy decisions of our national governments and supranational bodies, like the United Nations, suitable to deal with the issue or are they primarily geared towards lavishing money on ineffective special interest groups? Shouldn't we possibly even welcome climate change for its potentially positive impact on many a region of the world?

The question begs, should an investment magazine delve into the subject at all?

Our team decided it should, for a simple reason: there is money to be made in any case. Tesla, the "green" American car-maker, has seen its share price increase by a factor of 10 since 2013 alone. If the world's public believes that there is an issue, who would we be to argue instead of focussing on how we can turn a buck from it?

Our roving analyst and investor, Victor Hill, has looked at the subject in depth. He summarises his insights and conclusions from page 10 onwards. Victor is highlighting some of the investment opportunities that stand to benefit from the ongoing public debate around the subject.

No matter where you stand on the issue, I am confident you'll find his extensive report insightful and useful in a number of ways, especially as far as your investments are concerned.

Best regards,

Swen Lorenz
Editor, Master Investor Magazine

CONTACTS

ADVERTISING
swen@masterinvestor.co.uk

EDITORIAL ENQURIES
james.faulkner@masterinvestor.co.uk

SUBSCRIPTIONS
admin@masterinvestor.co.uk

FOLLOW US

Master Investor Ltd.
Suite 88
22 Notting Hill Gate
London W11 3JE
United Kingdom

EDITORIAL
Editor Swen Lorenz
Editorial Director James Faulkner
Creative Director Andreas Ettl

EDITORIAL CONTRIBUTORS
Filipe R. Costa
Richard Gill, CFA
Victor Hill
David Jones
John Kingham
Jim Mellon
Tim Price
Samuel Rae
Carl Shave
Alan Steel
Nick Sudbury

CONTENTS

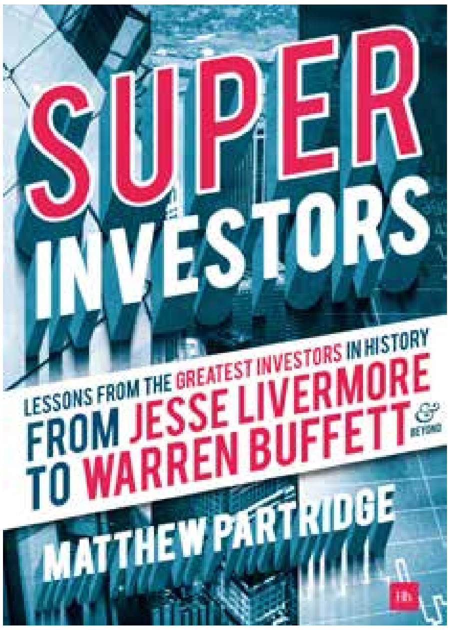
ISSUE 29 – AUGUST 2017

ON THE COVER

FEATURE

ALL OTHER TOPICS

ALL OTHER TOPICS



BY JIM MELLON

MELLON ON THE MARKETS

NEW "HIGHS" FOR EARLY INVESTORS

There are three of us Mellons currently trying to get books out ahead of each other: my father is finishing one on African Bangles; my brother in law is close to completing a magnum opus on the future of media; and I am pleased to say that, albeit delayed, Juvenescence is coming out on September 25th and is currently being formatted. Christmas presents in our family this year are a no-brainer, and will be circular. At least all three of us know we will have a few sales, if only to ourselves!

On the subject of Juvenescence, I am off to San Francisco with my old best friend Anthony Baillieu to meet my new best friend Aubrey de Grey (Google him!) and my dear colleague Greg Bailey. We are all spending the day at the Buck Institute of Aging – not to be rejuvenated ourselves, but to understand more of the amazing science that is coming out of this institution.

One of the key senolytic drugs in development, being trialled by Unity Lifesciences, first emerged at the Buck. In a nutshell, senolytics are among the first of several compounds that will add significantly to human lifespan in the next ten or twenty years. While more fully described in the new book, these are drugs that clear so-called senescent cells from tissues. Senescent cells become more prevalent as we age, and are cells that are neither dead nor healthy, but which exist in a limbo like state. They contribute significantly to inflammatory disease and their removal, at least in part, is demonstrably life extending in animal models.

We are also visiting another company involved in senolytics, and will be looking to make an investment in it for our venture, Juvenescence Limited, which is jointly owned by Greg, Dec Doogan (formerly head of drug development at Pfizer, the world's biggest drug company) and myself. We have collectively recently invested a largish sum in a venture called Insilico Medicine, which uses deep neuronal networks (aka AI) to enhance medical discoveries, and we have capitalised a JV with Insilico called Juvenescence AI which will look to discover five new chemical entities a year for several years, using AI. These are exciting times in the field of longevity, and believe me, staying healthy today will allow you to cross a bridge to ultra-long life in the not too distant future.

Of course, if we all live as long as I think we can, then we will need good investments to sustain ourselves. The gradualist approach to raising the pensionable age (to 68 in 2030 in the UK) is ridiculous. Governments need to wake up and recognise that people are going to live much, much longer, and that older workers will not only be hired (especially as the pool of younger workers shrinks) but will be required.

Retirement ages of 80+ are going to be commonplace, as are centenarians.

It is important for people to recognise that this trend to Juvenescence will result in a whole new approach to life. No longer will we will live the three-stage life as described in Andrew Scott and Lynda Grafton's


THIS NOTE IS LEGAL
FOR ALL DEBTS, PUBLIC

"RETIREMENT AGES OF 80+ ARE GOING TO BE COMMONPLACE, AS ARE CENTENARIANS."

brilliant book, the 100 Year Life, but we will go on a very different course. Born learn, earn, retire and expire will be replaced by a life that encompasses multiple careers, continuous education, and very different types of work. In Juvenescence, we outline portfolios that can take advantage of those trends. The portfolios we outlined in our previous biosciences book, Cracking the Code, have smashed the returns of all the indices since it was published in 2012 and we are hopeful of doing the same with the guide portfolios we have included in this book.

In the meantime, the FANGs have begun to crack, and not before time. Sure, Facebook produced stellar quarterly results and still looks robust; but Amazon, that convenient machine of perpetual profitless prosperity, produced terrible results – only a third of the profits expected – and Alphabet demonstrated what I have long suspected: that these big internet companies might end up like banks: regulated, fined and slow growing, with steadily declining returns on equity. I would stay short of all of them and look elsewhere for value. You'll have to look pretty hard, because there isn't much of it about.

The good news for followers of Master Investor (and you guys now make us one of the UK's most widely read financial publications) is that the era of negative yielding bonds appears to be over, and those who took our advice to sell or short such bonds will have done very well. Bond yields in major economies have been moving up, albeit slowly, but I am sure there will be a bond crash in the not-too-distant future. After all, central banks are beginning to taper, and hence the single biggest buyer of bonds worldwide – the governments issuing them themselves – are retreating from the crazy manipulation of the past few years.

I have railed about how this manipulation distorts the price clearing mechanism, keeps zombie companies afloat, contributes mightily to wealth inequality, and funnels excess returns to people who are the least deserving – the idle rich. That era is coming to an end.

And although oil prices have been in retreat (and will continue to be), thus masking the upward trajectory of inflation, inflation is nevertheless beginning to emerge in subtle ways pretty much everywhere. That's why gold remains a top pick and it is acting very resiliently in the face of still fairly buoyant equity markets.

Regular readers may recall that for the past three months, I've suggested buying the euro (yes, the currency of the evil and doomed empire!) against the dollar, for mostly technical and valuation reasons. It's risen enough for now, I feel, and I would sell the euro against the dollar and indeed consider buying sterling against the euro.

Japan remains my favourite stock market, though **Sony (TYO:6758)**, my favourite pick, has run enough, and among the big stocks I would buy **Hitachi (TYO:6501)**, which is a kind of Japanese GE, instead.

Gilead (NASDAQ:GILD), another top pick at Master Investor, produced OK results in the latest quarter and remains outstandingly cheap. Its HCV franchise is stabilising, its HIV dominance continues and I love the look of its JAK inhibitor in development with **Galapagos (AMS:GLPG)** (another favourite).

I spent a day this week with my friend Lorne Abony, a truly brilliant businessman, and the boss of **Fast Forward (LON:FFWD)**. He was describing – over tea and not anything stronger, I hasten to add – the business of medical marijuana, in which Fast Forward has an investment. It's going to be a huge business, and one has to think that the big vice companies will buy up all the serious marijuana companies in due course.

Legalisation of soft drugs has to be the future, and there is no doubt that marijuana will rank as a major business once legitimised.

That's coming soon, and new "highs" must be envisaged for early investors.

Happy hunting!

Jim Mellon

Click here to follow Jim's trades on Twitter

About Jim

Jim Mellon is an entrepreneur and former fund manager. With a substantial international property portfolio and interests in a variety of companies, Jim is a highly experienced and successful investor.

BY VICTOR HILL

OPPORTUNITIES IN FOCUS

CLIMATE CHANGE: CURSE OR OPPORTUNITY?

Climate change is a reality. The glaciers are melting and the sea is getting hotter – with intractable consequences like rising sea-levels. But, that said, the climate models are inexact and we don't know by how much temperatures are going to rise and how rapidly. This is largely a matter of reasoned conjecture. What we know for sure is that climate change is going to be the biggest challenge of the 21st century.

We also know that we have to address man-made global warming by reducing our carbon emissions, which have been rising steadily since the beginning of the industrial revolution. This means that we have to re-engineer almost all the technology on which we have been reliant for so long. New industries such as renewable energy and GMOs in farming are now imperative.

Recently I have written in these pages about the advent of zero-emissions electric cars and even aeroplanes. But how will the electricity to power these machines be generated? Does renewable energy (from solar, wind turbines and other sources) have a future if real prices are allowed to prevail without government subsidy? And what technologies are being developed to reduce carbon emissions in other high-carbon emitting industries such as agriculture?

In 100 years' time climate change may come to be seen as a massive stimulus that forced mankind to abandon the dirty habits of the previous 200 years and to engineer a quantum leap in efficiency. And some of the technologies we are developing to combat climate change will come in handy when we colonise Mars. Future-oriented investors need to get on-trend. This is about your grandchildren's future. And it's also about your current portfolio.

The bad news first...

Since the industrial revolution – let's say, since about 1800 – mean global temperatures have risen by an estimated 1.1C (one point one degree centigrade). Or so the scientists tell us. That doesn't sound like very much. If I asked you to turn the temperature up by one degree in your office or your car, would you even notice?

But the entire eco-system of planet Earth is a fabulously balanced mechanism which is subtly sensitive to even fractional changes. The rise of one degree has been enough to start melting the Greenland glacier which has, in turn, shifted the distribution of water across the surface of the Earth. This has already caused the North Pole to shift eastwards by about one metre since 2005 – though that is the least of our concerns. More importantly, sea levels are rising, possibly rapidly, and extreme weather events are becoming more common.

The reason for the rise in temperature is that there is more carbon dioxide (CO2) in the atmosphere on account of mankind's burning fossil fuels, which are hydrocarbons such as coal, oil derivatives and natural gas. As more CO2 is pumped into the atmosphere, it contributes to the **greenhouse effect – a hypothesis that was first postulated by Jean-Baptiste Fourier in 1827.** This is that greenhouse gases trap heat in the atmosphere (CO2 is the

"IN 100 YEARS' TIME CLIMATE CHANGE MAY COME TO BE SEEN AS A MASSIVE STIMULUS THAT FORCED MANKIND TO ABANDON THE DIRTY HABITS OF THE PREVIOUS 200 YEARS AND TO ENGINEER A QUANTUM LEAP IN EFFICIENCY."

"CURRENTLY, HUMANKIND EMITS ABOUT 42 GIGATONNES OF CARBON DIOXIDE EACH YEAR. OF WHICH FIVE GIGATONNES LAST YEAR WAS PRODUCED BY THE USA – THOUGH CHINA IS NOW THE BIGGEST EMITTER BY FAR."

most conspicuous, but there are many others which are even more extreme in their effect, like methane). Without greenhouse gases (as on the Moon), most of the heat on the surface of the Earth would dissipate quickly into space: too high a density of greenhouse gasses (like Venus) and the Earth would become an uninhabitable inferno.

Remarkably, CO_2 accounts for only 0.041 percent of the Earth's atmosphere (that is 410 parts per million or *ppm*), although it has increased from concentrations of around 280 ppm in 1800 – that is a 40 percent increase. Of course, there have been times in the long history of the Earth when there was more CO_2 in the atmosphere, and we know that there were times when there was no ice at the poles. (Fossils of warmth-loving crocodiles have been found in Northern Canada). But scientists think that the current level of concentration is the highest for at least 800,000 years, and possibly for 20 million years.

Very approximately, one quarter of man-made emissions of CO_2 and other greenhouse gases are produced by transportation (cars and planes); one quarter from agriculture (especially meat and dairy) and forestry; one quarter from electricity production (particularly coal-powered); and one quarter from industry. Currently, humankind emits about 42 gigatonnes of carbon dioxide each year. Of which five gigatonnes last year was produced by the USA – though China is now the biggest emitter by far.

Global warming is not uniform. Polar Regions are affected more than temperate zones; and nights are warming faster than days.

A big-hitting molecule

In 1861 John Tyndall discovered that CO_2's three atoms vibrate when hit by certain photons. Photons from the sun pass straight through the atmosphere, but when they hit the Earth's surface they bounce back as infrared photons – that's heat to you and me. This heat is then absorbed by CO_2 molecules in the air. As a result, the more CO_2 (and other similar greenhouse gases such as methane, nitrous oxide, CFCs and ozone) the more heat is retained in the atmosphere instead of being released back into space.

When we burn hydrocarbons like coal, CO_2 and methane are released. Some of this is absorbed by plants and returned to the soil. Some is absorbed by the oceans, and some is stored in rocks. But these natural processes cannot keep up with the rate at which humans are releasing greenhouse gases by burning fossil fuels. And each molecule of CO_2 that we produce can remain in the atmosphere for thousands of years.

The Paris Accord of December 2015

A one percent rise in temperatures is one thing. But the climate models which have gained orthodoxy suggest that, if emissions of CO_2 continue to increase at the current rate, the total increase in temperatures vis-à-vis the 1800 baseline could be 3.6C by 2100. That level of increase would transform the entire surface of the Earth.

In December 2015 195 nations gathered in Paris for talks on climate change agreed to take sufficient action to limit the global temperature increase to 2C. The Paris Accord is extremely vague about how much of their existing emissions each country must cut, but the aspiration to limit the temperature rise implies that the large emitters in the developed world must make significant cuts in the immediate future. In practice, this has already happened. The USA is back to its 1992 level of emissions, partially thanks to shale gas generation. The UK is in the same ballpark.

For the global temperature increase to be capped at 2C it is reckoned that total global emissions should peak in 2020 and be reduced to near zero by about

2070. That is ambitious, but probably not impossible.

President Trump's decision on 01 June to withdraw the USA from the Paris Accord is of more symbolic than practical significance. It's more about the message it sends to China and India and other large, rapidly growing economies. That said, China has shown a very serious attitude towards climate change and has some of the most ambitious plans to switch to renewables of any country. (Assisted, cynics will add, by a US$100 billion Green Climate Fund which developed nations are supposed to make available to developing ones.)

Mr Trump's supporters might reflect that, according to the **Environment Defence Fund**, solar and wind power generators are creating 112 jobs in the US for every one new coal worker. In any case, California, which is the world's sixth largest economy in its own right, has declared for the Paris Accord. China and the EU immediately swore to cooperate more closely on climate change. And the US cannot formally leave the Paris framework before 05 November 2020 – by which time Mr Trump himself may be history. Moreover, in July, Mr Trump recently told his French counterpart that he might reconsider.

Agriculture

In the UK spring is beginning nearly two weeks earlier than it did just 50 years ago; and autumn one week later. Great news for British farmers and the vineyard managers of Kent and Sussex. Moreover, higher concentrations of CO2 are making the planet greener, particularly in drier areas because plants and trees thrive on CO2. Climate sceptics argue (see below) that this is good news. Supporters of the standard model argue against it. They say that, in Australia for example, extra vegetation is reckoned to be sucking up water and thus reducing river flow by up to one third[i].

The real culprit in agribusiness is meat production. We are reliably informed that the best way to reduce our carbon footprint is to give up meat – especially beef since cattle emit huge quantities of methane through their rear ends (perfectly naturally, of course).

The problem will be: how to feed a growing global population in a world where much fertile land has been lost to rising oceans, where vast tracts of land will be needed to grow biofuels and where extreme weather events are more common? One answer is undoubtedly by the judicious use of genetically modified seeds (GMOs). Biologists are already developing crops that can capture more of the sun's energy, make their own nitrogen fertilizer and resist drought, flood, salt, pests and diseases.

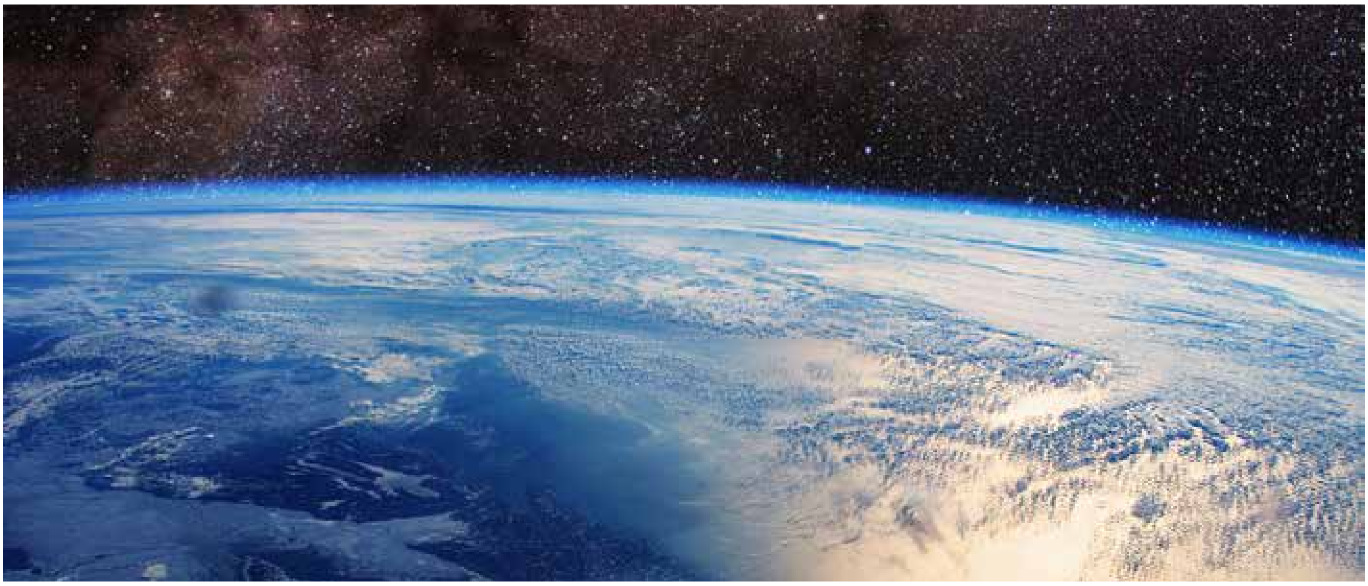
> **"IF WE CANNOT FIND AN EFFICIENT WAY TO REMOVE CO2 FROM THE ATMOSPHERE ON A GARGANTUAN SCALE WE ARE JUST GOING TO HAVE TO ADAPT TO GLOBAL WARMING."**

Carbon capture and storage

Based on concrete commitments for emissions reductions it is unlikely that we shall be able globally to reduce carbon emissions to zero by 2070. That means that we shall have to suck CO2 out of the atmosphere in huge quantities in order to not to exceed the 2C limit. To be more precise we shall need to suck out 600 gigatonnes of CO2 out of the sky before the end of this century.

The best way to achieve this is to grow plants which are then burned to produce energy. Such plants suck CO2 out of the atmosphere as they grow; when they are burned the CO2 released is captured and stored underground before it can escape.

Another idea is to fertilise the oceans so as to produce blooms of algae which would absorb CO2 from the atmosphere and then drag it to the bottom of the ocean when they die. But what about the danger to marine life?! If we cannot find an efficient way to remove CO2 from the atmosphere on a gargantuan scale we are just going to have to adapt to global warming.



Alternative perspectives

So far what I have sketched out is basically the *standard model* of climate change theory which is held almost universally by academic scientists and green activists. There are other views.

First there are those who deny that climate change is happening at all. They claim it is a "hoax" – a conspiracy peddled by leftists and loonies who seek to undermine the capitalist economy based on hydrocarbons. These people are happy to deny the evidence. If you point out that the glaciers are perceptibly melting – we can measure and record this – they will point out that some glaciers in New Zealand and Norway are actually getting bigger – which is true. If you adduce that Arctic sea ice is retreating – the North West passage is now navigable to shipping – they will tell you that there was record amount of Arctic sea ice last year, or the year before. (Of course, it depends when you draw the baseline).

They are adept at pointing out anomalies in the temperature data and it does unfortunately seem true that some over-zealous adherents of the standard model have been guilty of tampering with temperature data. These climate change deniers are not taken seriously in the scientific community.

Second, there are those who argue that climate change is happening but it is not man-made. They point out that the Earth's surface temperature has obviously fluctuated very widely over geological time – long before human beings were around. And it is true that the last great ice age came to an end in Europe and elsewhere, with massive glaciers that covered much of Britain melted completely roughly thirteen thousand years ago – all this without human help. (Though Stone Age troglodytes, as far as we know, did not go on protest marches against climate change.)

Some of these sceptics blame sun spot activity as the main driver of climate change. Again, mainstream science emphasises a correlation between CO_2 concentrations in the atmosphere and global temperature: the increase in CO_2 since 1800 is almost certainly due to humans' burning fossil fuel.

Third, there is a middle position which has been articulated by scientists such as Matt (Lord) Ridley and others. Lord Ridley has argued for a "lukewarm" view of climate change which is that *it is happening but that it is not necessarily all bad.* He is adamantly opposed to state-subsidised renewable energy which he considers damaging to the economy and the environment. In a report for the Global Warming Policy Foundation in 2013 he wrote:

I have come to the conclusion that current energy and climate policy is probably more dangerous, both economically and ecologically, than climate change itself. This is not the same as arguing that climate has not changed or that mankind is not partly responsible. That the climate has changed because of man-made carbon dioxide, I fully accept. What I do not accept is that the change is or will be damaging, or that current policy would prevent it.

Lord Ridley thinks that carbon dioxide emissions are doing more good than harm, largely because of the CO_2 fertilisation effect, which boosts crop yields, and contrary to the received wisdom, is actually helping forestation.

In support of this view Indur M Goklany, an eminent climate scientist of Indian heritage who works for the US Department of the Interior, wrote a paper called *Carbon dioxide: the good news* in 2015. Mr Goklany argues that the assessments used by policy makers have overestimated the effects of global warming, underestimated the direct benefits of carbon dioxide, and underestimated man's capacity to adapt to it.

Lord Ridley gave the 2016 Global Warming Policy Foundation annual lecture on *Global warming versus global greening*, in which he argued that there was now considerable satellite evidence to support the global greening hypothesis. Inevitably, Lord Ridley's views on climate change have been criticised by Friends of the Earth because he has connections to the coal industry – he is a landowner who, unlike most of us, actually owns a (disused) coal mine! (He can't help being a Viscount who has inherited estates in Northumberland.) That does not detract, in my view, from his status as a scientific thinker.

I might add that there is a school of thought emerging that climate change is only *one problem amongst many*. Some see the problem of plastic in the oceans and the deleterious consequences for marine life as an even greater problem; or the calamitous decline in biodiversity. I know I'm courting controversy here by so much as suggesting there are different views which should be heard. As a placard at a recent anti-Trump protest asserted: *Not even Hitler questioned climate change!*

"THE PARIS ACCORD WAS PREDICATED ON A MODEL WHICH STATED THAT, IF THERE WERE NO FURTHER EFFORTS TO REDUCE GREENHOUSE GAS EMISSIONS, THEN THE WORLD WILL BE 3.6C HOTTER IN 2100 THAN IT WAS IN 1800."

Climatic modelling

The basic science of global warming is relatively uncontroversial: the Earth is warming because of humans' burning hydrocarbons. But by how much and how rapidly?

To answer these questions, the scientific establishment relies on climate models – sophisticated computer programmes into which they input assumptions about future carbon emissions going forward up to the end of the century. The other critical input is the temperature data recorded over the last 50 years or so. What comes out of the model is a single number – an estimate of the temperature increase at a future date. The Paris Accord was predicated on a model which stated that, if there were no further efforts to reduce greenhouse gas emissions, then the world will be 3.6C hotter in 2100 than it was in 1800.

These models, while they are regarded as sacred by the climate cognoscenti are subject to criticism. The systems in play are non-linear, multi-factorial and highly complex, like the weather itself. The notion of "CO2 equivalence" – that is, how much more warming is attributed to a kilogram of methane relative to a kilogram of CO2 – is controversial. Further, the temperature data the scientists use has been questioned. In November 2009 (just before the Copenhagen Climate Summit) the University of East Anglia Climatic Research Unit was accused of Climategate – of adulterating historic temperature data for its own purposes. And as recently as February this year America's National Oceanic and Atmospheric Association (NOAA) was accused of manipulating data by a self-styled "whistle-blower"[ii].

Estimates of sea level rises are particularly controversial since some models ignore the likely evaporation of much glacier melt water into the atmosphere.

Just to be clear, I am not a climate change denier: but I know enough about financial risk models to be aware that the output of all so-called "black boxes" should always be regarded warily. Both financial risk and climate models draw heavily on probability distributions at assumed levels of confidence – which carry methodological problems[iii]*.*

Adaptation strategies

There are an increasing number of influential thinkers who argue that we can take measures not only to survive but to thrive in a warmer world. First, we should invest more in sea defences. Second, we need to plant more trees on high ground and build bigger storm drains to manage increased rainfall. Third, we need to manage our fresh water resources more carefully. All of these things are possible given judicious management and the right technology.

"BOTH CHINA AND INDIA ARE INVESTING HEAVILY IN RENEWABLES."

A UK flood contractor, the services of which are in demand across the pond...

Outgoing New York City Mayor Michael Bloomberg announced a $20 billion plan in June 2013 to build new levees and sea walls in New York City. Large parts of New York and the surrounding metropolitan area were still recovering from the damage wrought by Hurricane Sandy in late 2012, which caused damage estimated at US$19 billion[iv]. Amongst the beneficiaries of this programme was a little known Worcestershire-based company founded in 2007 called **UK Flood Barriers Ltd**[v] (private). The company has already rolled out major flood defence installations across the UK and has international ambitions. For a major listed UK construction company developing expertise in flood defences, consider **Kier Group PLC (LON:KIE)**. The company has already delivered a £30 million flood defence programme for the city of Exeter.

Renewables

Last year, only about 10 percent of global electricity production came from renewables – principally solar panels, wind turbines, geothermal and other related technologies. But that is growing fast – about 55 percent of *new capacity* was in renewables. Meanwhile, overall emissions attributed to electricity production seem to have stabilised. Despite Mr Trump's best efforts, coal-powered electricity generation is in decline, not least in the US.

In recent years there was an argument by climate sceptics that cutting back on the use of hydrocarbons in the West was pointless since China and India were opening a new coal-fired power station every week[vi]. But it seems that both China and India are investing heavily in renewables. Indeed, China now boasts the global market leaders for both photovoltaic panel production and wind turbines (see panels).

For the ecologically inclined, switching off electrical devices at home and switching to low-energy bulbs, while worthy, will have minimal environmental impact, unless you are getting your electricity from renewable sources. Unfortunately, however, as I explained in a recent article referring to the work of the eminent climate change scientist the late Professor David MacKay, the idea that we could sustain all our needs by switching to renewables is *delusional*.

The top solar panel manufacturers[vii]

Trina Solar (NYSE:TRA (ADRs) & FRA:TR3) is a Chinese company, located in the province of Jiangsu, with numerous operations in the USA. Founded in 1997 the company develops and produces solar technology. In the past few years Trina Solar was listed repeatedly on Fortune's Top 100 of the world's fastest growing companies. Trina Solar has developed a vertically integrated supply chain, from the production of ingots, wafers and PV cells to the assembly of high quality modules. In late June it was announced that Trina was supplying India's second largest solar power facility at Kurnool, Tamil Nadu. The company's share price has done well over the last year but is only now back to mid-2013 levels.

Canadian Solar (NASDAQ:CSIQ). Shares on the Ontario-based solar panel manufacturer jumped 24.3% in June, as its prospects surged. Q1 2017 results were not as poor as analysts expected. Revenue rose slightly to CAD677.0 million, and on an adjusted basis net earnings were CA$6.0 million, or $0.10 per share. Short-term news flow is positive, but Canadian Solar's scale has not generated consistent profits. The company is breaking even in a high demand environment, and its CAD2.4 billion debt burden is a cause for concern.

Jinko Solar Holdings Co. (NYSE:JKS). On 20 July Jinko announced a programme of collaboration with **Greatcell Solar (ASX:GSL)** of Australia and the Nanyang Technical University (Singapore) to develop a new generation of PV cells called perovskite cells[viii]. Trina Solar, **Wuxi Suntech** and **Oxford Photovoltaics** (private) are already working on this.

Other major players in this space to watch include **JA Solar Holdings (FRA:YI2A), Hanwha Q Cells Co. (NASDAQ:HQCL (ADRs)), First Solar Inc. (NASDAQ:FSLR), Yingli Green Energy Holding Co. (NYSE:YGE (ADRs))** and **Shunfeng International Clean Energy Ltd (HKG:1165)** and **ReneSola Ltd (NYSE:SOL)**. Note the profusion of Chinese participants.

Total SA (EPA:FP) the French oil major, boasted that it had become the world's second-ranked solar energy operator as a result of its acquisition of a 60 percent stake in **SunPower Corporation (NASDAQ:SPWR)** of the USA for US$1.38 billion in April 2011.

Cutting our carbon footprints

According to a recent DEFRA study published in *Environmental Research Letters* we have to do more than recycle our waste, turn off appliances and use low-energy light bulbs[ix]. It argued that the public should be advised to abjure air travel, live car-free (saving about 2.4 tonnes of CO2 per car per year), eat a plant-based diet (a saving of 0.8 tonnes per person) and have smaller families. David MacKay estimated in 2009 that if we subscribe to the doctrine of *contraction and convergence* (the idea that eventually all countries should emit the same amount of CO2 per person per year) the UK will have to cut average emissions per person from 11-12 tonnes per year in 1990 by 85 percent to 1-2 tonnes by 2050[x].

I know people that aspire to this – but they are a minority. Most of us want to go on more holidays and would find life challenging without a car. Personally, I don't think this target is realistic unless we all live in yurts, go around on bicycles and become vegans. Such a programme may be a hard sell for the hapless politicians.

One mitigation effect will be increased efficiency – the average UK household already uses much less electricity than ten years ago because appliances are more efficient and houses are better insulated. Electrification will help because petrol engine cars are about 25-30 percent efficient while electric cars are about 85-95 percent efficient. But beware the potential *Jevons Paradox* whereby savings in efficiency are eroded by more waste and increased demand unless checked by the price mechanism.

Rising electricity prices will reduce demand. (I wonder if any of Mrs May's advisers explained that capping electricity prices would increase carbon emissions.) But the rising cost of electricity will act as a drag on growth. The UK already has one of the highest electricity tariffs in Europe and this is a considerable competitive disadvantage, especially in energy-intense industries such as steel production.

As for family sizes, fertility rates have already fallen in Europe and North America – the baby boom is currently not here but in Africa. Ultimately, global carbon emissions will only begin to fall when the global population peaks, and then hopefully begins to fall towards the end of this century. Many believe that that will be too late.

The catastrophists

The most extreme supporters of the standard theory argue that we are in mortal danger of imminent climatic catastrophe. *New Scientist* tells us that three massive glaciers are in rapid retreat. In Antarctica the Thwaites glacier is melting fast. In Greenland both the Jakobshavn and Zacharie Isstrom glaciers are in peril. Scientists tell us that if these three glaciers alone melted completely then they would release enough water to raise global mean sea levels by two metres. That would affect an estimated US$882 billion of property in the USA alone.

With less sea ice in the Arctic Ocean, the sea is likely to absorb more heat, which in turn will inhibit ice formation in winter. This is what scientists call a *negative feedback loop*. Moreover, the amount of sea ice in Polar Regions drives ocean currents. Some doomsayers foresee the loss of the Gulf Stream – which would actually make Britain colder – and the collapse of the Asian and African monsoon cycles.

Again, if the permafrost of Siberia and Canada thaw, huge reserves of sunken methane – the most powerful greenhouse gas – could be released into the atmosphere, thus accelerating global warming.

Recently, one of the world's most prestigious scientists, Cambridge's Professor Stephen Hawking, joined the catastrophist bandwagon. He thinks that, as a result of President Trump's abandonment of the Paris Accord, climate change could get out of control to the extent that the Earth could resemble Venus. It is not clear over exactly what time frame Professor Hawking thinks this might happen. I take comfort from the fact that the illustrious Professor, who probably has the highest IQ of almost anybody alive today, also voted for Jeremy Corbyn.

The top wind turbine manufacturers[xi]

Vestas Wind Systems A/S (CPH:VWS). Some 8.7GW of Vestas turbines were installed in 2016. That was 16 percent of all onshore wind installations last year driven by a big increase in business in the US. The Danish wind turbine manufacturer continues to pursue a global strategy with projects commissioned in 35 countries, more than any other turbine maker. In late June CEO Anders Runevad announced plans to expand in the Middle East and the Asia-Pacific region[xii]. The Company is profitable. Its shares are up about 28 percent year-to-date at time of writing, trading at a multiple of about 16.5.

General Electric (NYSE:GE). GE, the huge US conglomerate, was the second placed wind turbine generator last year with 6.5GW of new capacity rolled out, 0.6GW more than in 2015. While GE narrowly lost its traditional lead in the US market for newly commissioned turbines to Vestas, it increased its global presence to 21 countries in 2016, up from 14 in 2015. Be aware that the stock has lost about 18 percent of its value over the last twelve months and hit a 21-month low in early July. That said, wind power is one of its most rapidly growing divisions.

Xinjiang Goldwind Science & Tech Co Ltd (SHE:002202 & HGK:2208). Goldwind rolled out 6.4GW of new capacity in 2016, virtually all of which was in its home market of China, where Goldwind further extended its market share. Overall installations in China were 22.8GW last year, down 21 percent from the record 29GW in 2015. The shares have roughly flatlined since early 2016 and are well down on their 2015 peak.

Siemens Gamesa Renewable Energy SA (BME:GAM). Spain's Gamesa completed the merger with Siemens Wind (the wind turbine operation of **Siemens AG (FRA:SIE)**) in March 2017. Last year Gamesa came in fourth place for onshore turbine installations. Almost one in three of Gamesa's new wind turbines were installed in India. The merger of Siemens Wind and Gamesa will allow the joint company to catch up and create a *big four group* of dominant manufacturers. So far, however, the market has not cheered on the merger. On 19 July the company announced it was contracted to build a 23MW wind park on the island of Tenerife for Canary Islands-based energy products distributor DISA[xiii].

Enercon GMBH (private) is the market leader in the German domestic market and installed one half of all new German wind turbine capacity in 2016.

Nordex Group (FRA:NDX1) ranked in sixth place last year, after its merger with **Acciona Windpower**. This German manufacturer develops, manufactures and distributes wind power systems. Once again, the share price performance has been disappointing – shares are down by about 50 percent over the last twelve months.

Other major global players include **Guodian Changyuan Electric Power Co. Ltd (SHE:000966)** of China and **CS Wind Corporation (KRX:112610)** of South Korea.

Action

I explained in the March edition of the MI magazine why you should only invest in oil majors which are diversifying into renewables. Most of their reserves of hydrocarbons going forward will have to remain in the ground. That represents a massive disinvestment out of fossil fuels.

That said, renewables, of which only solar and wind power are in widespread operation, remain almost entirely dependent on government subsidy regimes which are fickle. The share prices of the PV panel producers and the major wind turbine manufacturers have, overall, done poorly over the last two years. We can be sure, however, that the producers of solar panels and wind turbines – the hardware of renewable energy – will continue to enjoy increasing demand for the foreseeable future.

"AGRICULTURE WILL OCCUPY A RENEWED CENTRALITY IN THE GLOBAL ECONOMY AS CLIMATE CHANGE IMPENDS."

Consider including a couple of the top solar producers in the long-term portion of your diversified equity portfolio on a very selective basis. In addition, you might add at least one wind turbine manufacturer – especially if you are underweight on China (see panels). You may also wish to add at least one heavyweight civil engineering contractor which understands state-of-the-art flood defences. I am convinced that this is going to become huge in the UK and elsewhere.

Agriculture will occupy a renewed centrality in the global economy as climate change impends – as I argued in the January edition of the MI magazine. One leader in GMO technology I mentioned then is **Bayer AG (ETR:BAYN)**.

Regrettably, there is no practicable way that the massive increase in electricity generation capacity that we will require for the migration of vehicular transport from hydrocarbons to electric will be furnished entirely from renewables. Rather, we are likely to see a huge increase in nuclear power generation over the next three to five decades for which currently only the French are well positioned to meet. That is one reason why President Macron has already set a target date of 2040 for the total electrification of vehicular transport in his country. I wrote about nuclear power technology in the October 2016 edition of the MI magazine. **EDF (EPA:EDF)** is still, far and away, the global leader in nuclear power technology.

About Victor

Victor is a financial economist, consultant, trainer and writer, with extensive experience in commercial and investment banking and fund management. His career includes stints at JP Morgan, Argyll Investment Management and World Bank IFC.

i See New Scientist, 24 June 2017, article by Michael Le Page, page 28.
ii See: http://www.washingtontimes.com/news/2017/feb/5/climate-change-whistleblower-alleges-noaa-manipula
iii For anyone interested in this topic I strongly recommend the work of Nassim Nicholas Taleb e.g. *The Black Swan*, Penguin, 2008.
iv See: https://www.theverge.com/2013/6/11/4420408/mayor-bloomberg-20b-plan-nyc-defenses-climate-change
v See: http://www.infrastructure-intelligence.com/article/may-2017/making-waves-flood-defence-here-and-across-pond
vi See What about China? By Alastair Sawday, 2008.
vii According to https://www.pv-tech.org/editors-blog/top-10-solar-module-manufacturers-in-2015
viii See: https://www.pv-tech.org/news/jinkosolar-starts-perovskite-cell-rd-collaboration
ix Reported in the Daily Telegraph, page 1, 12 July 2017.
x *Renewable Energy without the Hot Air*, David JC MacKay, UIT Cambridge, 2009.
xi See: https://about.bnef.com/blog/vestas-reclaims-top-spot-annual-ranking-wind-turbine-makers
xii See: http://www.japantimes.co.jp/news/2017/06/23/business/worlds-biggest-wind-turbine-maker-vestas-sets-sights-asia-pacific-middle-east-markets/#.WW9xBOmQzIU
xiii See: https://renewablesnow.com/news/siemens-gamesa-secures-23-mw-wind-epc-deal-in-tenerife-576573

BY JOHN KINGHAM

DIVIDEND HUNTER

IMPORTANT LESSONS FROM THE CARILLION DISASTER

Following its demerger from Tarmac Group in 1999, Carillion has given its shareholders fantastic returns year after year. Perhaps the best example of this is its dividend, which grew every single year, going from 2.7p in 1999 to 18.4p in 2016. That's equivalent to a growth rate of 12% per year, every year, for 17 years.

But now that growth has come to an end, and that's putting it mildly. Following a recent negative trading update, the company suspended its dividend and the share price collapsed by more than 70% in one day. So what went wrong? How does a seemingly successful company go from hero to zero in such a dramatic and rapid fashion and, perhaps more importantly, how can we avoid owning companies like Carillion just before they blow up?

Let's start by looking at the company's business model.

A risky business chasing large, long-term contracts

Carillion is involved in financing, designing, building and operating large pieces of infrastructure such as buildings, roads and railways. These tasks are often bundled together into a large, long-term contract between the client and Carillion. For example, Carillion is a 50% partner in a joint venture to design, build and manage new army bases over the next 35 years, in order to support the return of almost 19,000 overseas UK troops.

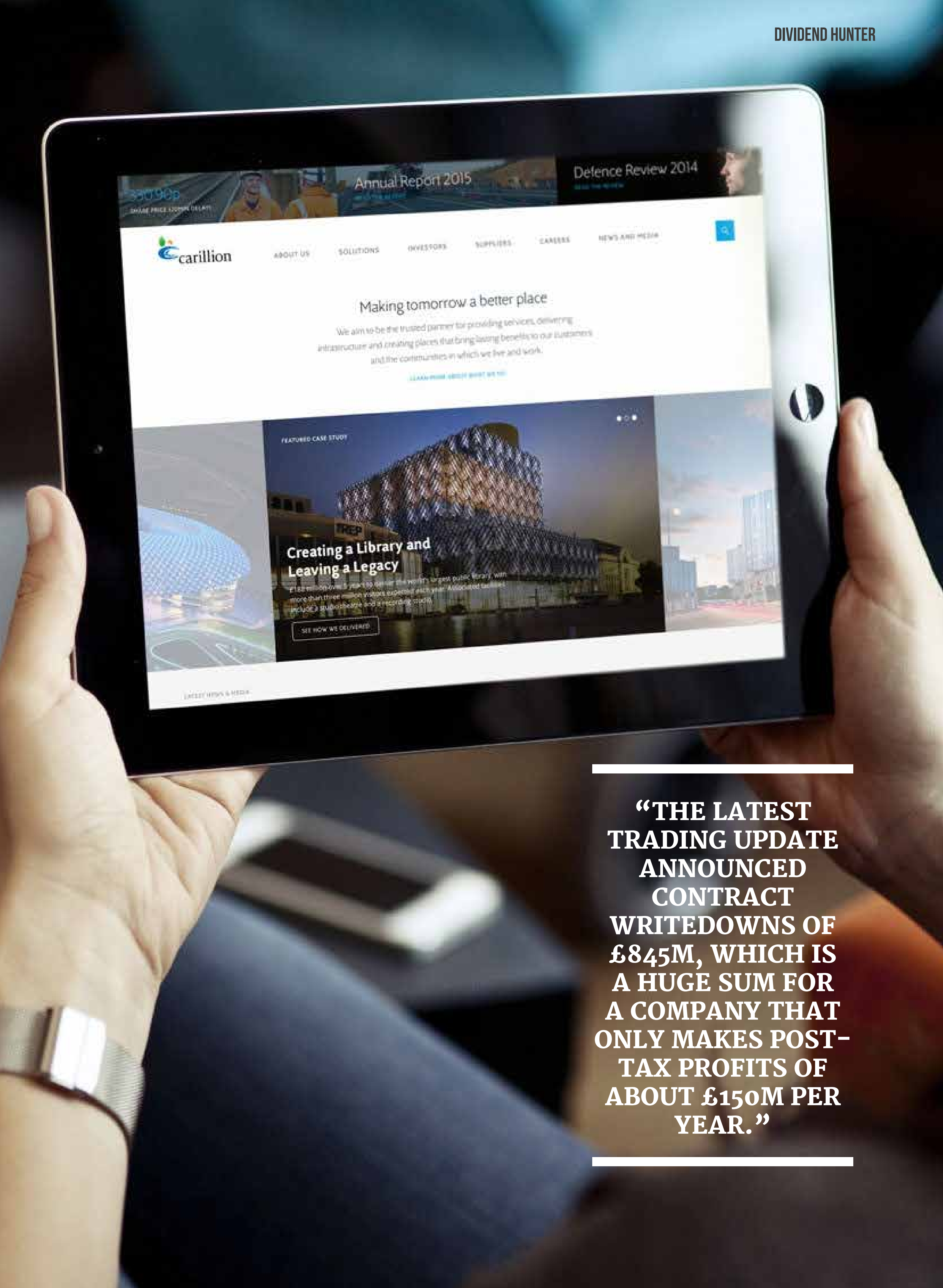
This dependence upon large, long-term contracts is typical of businesses in the support services sector, but there are many problems with this model. For example:

1. These contracts can be worth a lot of money, so competition for them is fierce. This can reduce profit margins to wafer thin levels.

2. The contract represents a large expense for the client, so they are likely to negotiate hard and go over the details with a fine tooth comb. This can also crush profit margins and can lead to clients refusing to pay, if the terms of the contract are not sufficiently met.

3. Expenses relating to the contract lie in the future and are therefore uncertain. If expenses increase beyond expectations the service provider can quickly find itself locked into a loss-making contract for many years.

4. Competitors may indulge in "suicide bidding", where they charge the client less than it will cost to fulfil the contract. This can help them win business and keep their workforce busy, but it can reduce margins across the whole sector, especially with a



"THE LATEST TRADING UPDATE ANNOUNCED CONTRACT WRITEDOWNS OF £845M, WHICH IS A HUGE SUM FOR A COMPANY THAT ONLY MAKES POST-TAX PROFITS OF ABOUT £150M PER YEAR."

client like the government which often awards contracts to the lowest bidder.

As a result, construction and support service companies often have low profit margins and are prone to contract writedowns when things go wrong (i.e. the expected income from a contract is suddenly reduced, either because of increasing expenses or the client's reluctance to pay up).

In Carillion's case, the latest trading update announced contract writedowns of £845m, which is a huge sum for a company that only makes post-tax profits of about £150m per year.

However, in my opinion the lesson here is not to avoid construction or support service companies. Instead, I would say the first lesson is to treat them with care. Be aware that contracts can go bad, and when they do it can be extremely costly. Here's a general rule of thumb I like to follow:

INVESTMENT RULE: Be extra careful with companies that depend on large, long-term contracts

In order to reduce risk, what I look for in construction and support services companies is: 1) Good profitability, which shows that the company isn't forced to compete primarily on price; 2) A robust balance sheet, which makes it easier to deal with major contract writedowns when they do occur.

So how does Carillion stack up on these two primary requirements of good profitability and a bombproof balance sheet? Let's start with profitability.

Low profitability was a sign of weakness

I measure profitability using post-tax (net) return on capital employed, averaged over the last ten years. Among dividend-paying FTSE All-Share companies, the average profitability using that approach is about 10%.

That's an easy baseline to remember: If a company's average net return on capital employed over the last decade is less than 10% then it's below average. If it's above 10% then it's above average.

"HERE'S MY TAKE ON LARGE ACQUISITIONS AND ACQUISITION SPREES: I DON'T LIKE THEM."

Carillion's profitability over the last decade was just 7%, so it's definitely below average. It's also below average relative to other construction and support service sector stocks, where the average profitability is 8.4%.

Here's my rule for profitability:

INVESTMENT RULE: Don't invest in a company if its ten-year profitability is less than 7%

Carillion would have made it past that rule, but only by the skin of its teeth.

Low profitability, combined with the company's high risk business model, was a good sign that investors should have been super-cautious about investing in this company.

Even so, Carillion does just about scrape past my profitability test, so that test alone would not have been enough to stop me from investing in the company. Clearly some additional checks are required if we're to avoid this sort of value trap in future.

So what about Carillion's balance sheet; was it as strong as it should have been? The short answer is no. The longer answer is more interesting.

Massive debts used to finance massive acquisitions

Between 2004 and 2011, the company went on a massive acquisition spree. The idea was to expand away from the UK by acquiring companies with overseas operations, and to expand away from construction by acquiring support services businesses.

In both respects the acquisition spree was successful, and during that period the company spent more than £1.3 billion acquiring other companies, including Mowlem (construction), Planned Maintenance Group (support services) and Eaga (energy efficiency products).

Here's my take on large acquisitions and acquisition sprees: I don't like them. They can create all sorts of problems if the acquirer attempts to integrate large numbers of new people and processes into its existing business. They can de-stabilise an otherwise steady core business as management forget the old core business and instead chase dreams of rapid acquisition-driven growth. Finally, they have a nasty habit of requiring lots of debt.

Here's another rule that I like to use:

INVESTMENT RULE: Don't invest in a company if it spent more on acquisitions over the last decade than it made in profits

In 2011 this would have ruled Carillion out as an investment. At that time it had spent more than £1.3 billion on acquisitions during a decade where it only made £750 million in profits. That's a dangerously large ratio of acquisitions to earnings.

However, by 2017 that particular alarm bell would have stopped ringing because the company has become far less acquisitive in recent years. So this rule would have also failed to rule Carillion out as an investment in recent months and years. However, the fact that Carillion was a relatively recent conglomeration of previously separate business would have been yet another warning flag.

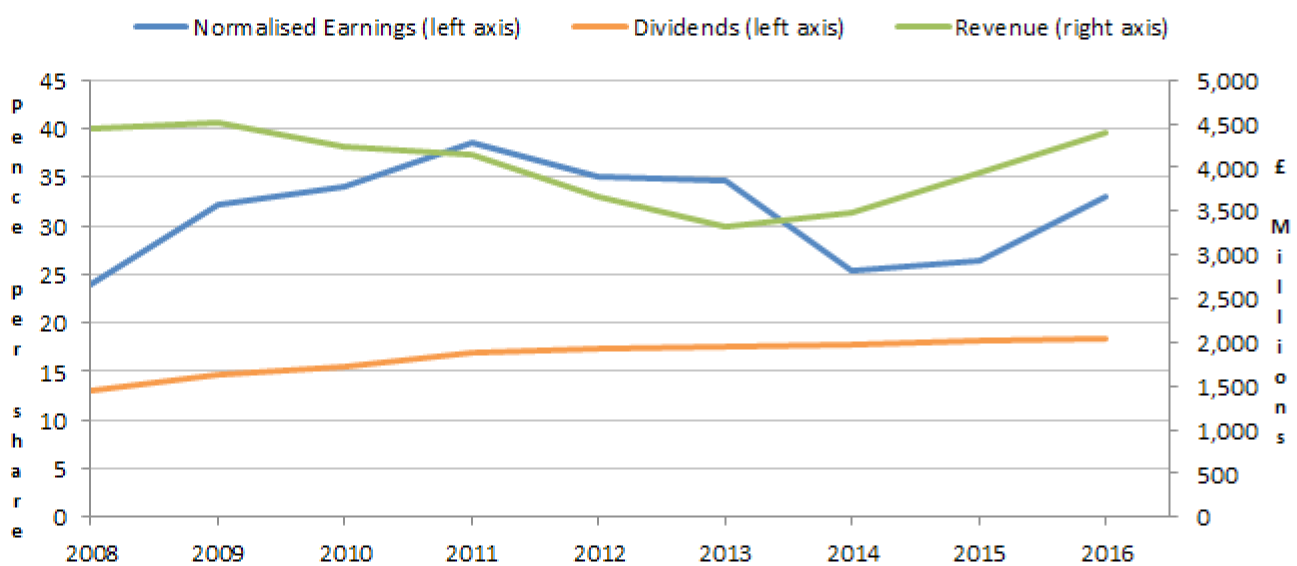
If I'd been looking to invest in Carillion at any point in the last couple of years, I would have been extremely cautious at this point of the analysis because of its risky business model, its low profitability and its highly acquisitive past. But so far I haven't seen a knock-out blow; something that would have made me say "no way" to the idea of investing in this company. But that's about to change.

A very important point is that a large chunk of the £1.3 billion acquisition spree was funded with debt. The company's total borrowings went from £90 million in 2005 to £813 million in 2012. At the same time, debt interest payments went from £5m in 2005 to more than £30m.

> **"FOLLOWING ITS ACQUISITION SPREE CARILLION NEVER REALLY MANAGED TO REDUCE ITS DEBTS BY MUCH."**

I'll put that into context. In 2012 the company's earnings (post-tax profits) over the previous five years had averaged about £135 million. That means its £813 million debt pile was more

Long-term results for Carillion



than six-times its recent average earnings. In contrast, the average debt/earnings ratio for dividend-paying FTSE All-Share stocks is about four.

So despite being a company with a risky cyclical business model and below average profitability, its debts were above average. That is not a brilliant combination.

Of course, that was in 2012, but following its acquisition spree Carillion never really managed to reduce its debts by much. By the time its 2016 results were published in March 2017, Carillion's borrowings were £689 million compared to five-year average earnings of £140 million. This gives the company a debt/earnings ratio of 4.9 today. That's the sort of ratio I might just about accept from a defensive company like Unilever, but I think it's too much for a cyclical sector stock. Here are my two rules for the debt/earnings ratio:

INVESTMENT RULE: Only invest in a cyclical sector stock if its debt/earnings ratio is below 4.0

INVESTMENT RULE: Only invest in a defensive sector stock if its debt/earnings ratio is below 5.0

In fact, given the high risk, low profitability nature of Carillion, I would probably insist on an even lower debt/earnings ratio. Perhaps a limit of 3.0 would be more appropriate than 4.0. To get to that level, Carillion would have to reduce its present borrowings by more than £260 million.

If these debts were Carillion's only financial problem then I would say that the market's reaction to the recent negative trading statement was overdone. I would say that the suspended dividend was probably a good thing and that the dividend cash (totalling around £80 million a year) should instead be used to reduce debts. Within three or four years the debt pile could be brought down to more sensible levels and the dividend could be reinstated.

But excessive borrowings are not the only problem with Carillion's balance sheet. In fact, there's another problem which I think is far more serious.

"THIS PENSION DEFICIT IS UNLIKELY TO EVER BE ELIMINATED WITHOUT A MASSIVE RIGHTS ISSUE."

A massive pension scheme that threatens to swallow the whole company

When Carillion split from Tarmac in 1999 it took with it several defined benefit pension schemes related to current and past employees.

In Carillion's annual report for 2000, the total liabilities of these schemes came to £430 million. At the time the company's average post-tax profits were around £32 million, so pension liabilities were more than 13-times earnings. That's a massive pension liability, but at the time it wasn't a problem because those liabilities were easily covered by pension assets of £557 million (as long as pension assets exceed pension liabilities, everyone is usually happy).

By 2005, those pension liabilities had more than doubled to £964 million. That was partly because of additional pension liabilities that came with acquisitions, partly because retirees were living longer and partly because interest rates had fallen (lower interest rates increase the present value of future pension liabilities). However, earnings had barely changed and so the pension/earnings ratio had grown to 28. This is way, way, way higher than most other companies. But still, there was little urgency, despite the pension surplus turning to a net deficit of £48 million.

By 2006, the deficit had grown to £76 million and management had agreed to begin making regular deficit reduction payments of around £30 million per year until the scheme was in surplus once again. I'm sure that seemed quite reasonable at the time. After all, it isn't going to take long to eliminate a £76 million deficit if you're making annual payments of £30 million, is it?

I'm sure that in 2006, Carillion's management didn't think that between 2006 and 2016 they would pay almost £450 million into the pension fund, only to see the deficit grow to more than £800 million.

Carillion only earns about £150 million per year (in a good year), so it has already paid the equivalent of three years of earnings into its pension schemes over the last decade, and yet it still has the equivalent of at least another five years of earnings to go. In fact, the company has already committed to pay around £50 million a year into the pension until at least 2029, if required (which it probably will be).

In my opinion, this pension deficit is unlikely to ever be eliminated without a massive rights issue. I just cannot see Carillion coming up with the necessary amount of cash solely from its business operations. Perhaps the best option would be a massive rights issue combined with handing the pension schemes off to an insurance company. But that's not for me to say.

What I will say is that this massive pension liability was a clear sign that Carillion was a very, very risky investment, right from the very beginning in 1999.

Yes, management managed to stay one step ahead of its pension demon for almost 20 years, but at the first minor stumble the company has fallen into its grasp.

A few years ago, following an almost disastrous investment in Balfour Beatty (which ran into serious problems largely because of its enormous defined benefit pension), I started using this pension-related rule:

INVESTMENT RULE: Don't invest in a company if its pension/earnings ratio is higher than ten

That rule isn't a silver bullet, but it should help steer you away from companies with potentially dangerous pension liabilities.

A ticking time bomb, if ever there was one

In summary then, Carillion ran into problems because it was an unhealthy cocktail of high risk factors, including 1) a dependence upon large contracts; 2) weak profitability; 3) a history of large acquisitions; 4) high debts and 5) a massive pension liability.

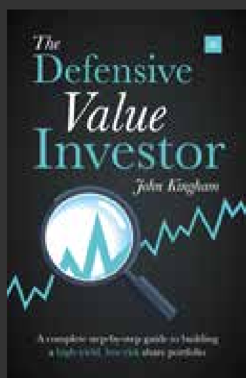
If you can avoid companies with those features then you could end up saving yourself a few sleepless nights and perhaps a lot of money as well.

About John

John Kingham is the managing editor of UK Value Investor, the investment newsletter for defensive value investors which he began publishing in 2011. With a professional background in insurance software analysis, John's approach to high yield, low risk investing is based on the Benjamin Graham tradition of being systematic and fact-based, rather than speculative.

John is also the author of *The Defensive Value Investor: A Complete Step-By-Step Guide to Building a High Yield, Low Risk Share Portfolio*.

His website can be found at: www.ukvalueinvestor.com.



BY NICK SUDBURY

FUNDS IN FOCUS

THE SMALL-CAP FUNDS WITH BIG POTENTIAL

Last year's Brexit referendum has created a huge amount of uncertainty for British businesses and the election of a minority Conservative government has muddied the waters even further. The lack of political leadership has made it difficult to assess the long-term economic impact of our departure from the EU on domestically focused companies, many of which tend to be at the small-cap end of the spectrum.

The fall in the value of sterling since the referendum has provided a major boost to the large caps in the FTSE 100 index, which on average derive 70% to 80% of their revenues from overseas. UK smaller companies have received less of an advantage as 60% of their business originates in this country, but if the economic outlook improves and the pound recovers it would be the small caps that would be the main beneficiaries.

When choosing a small cap fund it is essential to make sure that the manager has excellent stock selection skills, as the range of possible investment outcomes is enormous. Many of these businesses operate in niche markets and are hugely profitable, whereas those with high debt or that are susceptible to competition are extremely vulnerable and could fail altogether.

The quality of some of these stocks is evident from the fact that a few of them appear amongst the largest holdings of several of the most highly rated funds. These include the high growth, premium drinks maker Fever-Tree; Dechra Pharmaceuticals, which makes products for vets; and NMC Health, a private sector healthcare operator in the UAE.

According to FE Trustnet, the UK Smaller Companies investment trust sector has generated average one, three and five-year share price total returns of 35.5%, 51.5% and 139.8% respectively. Despite this strong performance, 11 of the 19 constituents are available on double-digit discounts.

The investment trust analysts at Winterflood report that the sector has a weighted average discount to NAV of 11%, whereas the less domestically sensitive trusts in the UK All Companies and UK Equity Income sectors are trading on tighter average discounts of 5.8% and 2.7% respectively.

If the UK economy turns out to be more resilient than many people expect, or the Brexit negotiations go well, it is likely that many of the small-cap trusts would generate strong returns and be positively rerated.

> **"THE QUALITY OF SOME OF THESE STOCKS IS EVIDENT FROM THE FACT THAT A FEW OF THEM APPEAR AMONGST THE LARGEST HOLDINGS OF SEVERAL OF THE MOST HIGHLY RATED FUNDS."**

Sustainable growth

Winterflood recommends **BlackRock Smaller Companies (LON:BRSC)**, a £567m investment trust that has been managed by Mike Prentis since September 2002. It has an impressive long-term record and has outperformed its benchmark in each of the last 14 financial years.

Prentis has put together a diversified portfolio of 166 holdings with the 10 largest accounting for 20% of the assets. Up to half of the fund can be invested in AIM-listed stocks with the weighting at the end of February being 39%.

The manager aims to identify companies that have five sustainable growth characteristics, namely: good management, strong market position, sound balance sheet, cash generative, and a track record of growth.

Companies are selected from the bottom up using a stock-picking approach with the key themes including: advantaged cash flow compounders, growth businesses with highly predictable revenues, and high potential micro-caps. The biggest holdings include the likes of CVS Group, Dechra Pharmaceuticals and Avon Rubber.

Over the last five years the shares have generated an impressive total return of 170%, which is well above the sector average of 134% and the 131% from the FTSE Small Cap ex Investment Company index. They are currently available on a discount to NAV of 12.6%.

A differentiated approach

Their other pick from the sector is the £101m **River & Mercantile UK Micro Cap Investment Company (LON:RMMC)**, which was launched in December 2014. It focuses on the micro-cap end of the spectrum that is normally defined as companies with a free float market value of less than £100m.

Philip Rodrigs, the fund manager, believes that this part of the market can often be overlooked or under-researched, but historically has generated better returns. He is a bottom up stock picker and has put together a concentrated portfolio using River and Mercantile's distinctive PVT (potential, valuation, and timing) approach. This has led him to build his largest positions in stocks such as Blue Prism Group, MaxCyte and Microgen.

Over the last 12 months the fund has generated a share price total return of 61%, which is well ahead of its peer group and benchmark. The shares are trading on a 3.4% discount to NAV, which is close to the average for the last 12 months.

The investment trust analysts at Numis prefer the £1,192m **Aberforth Smaller Companies Trust (ASL)** that was launched in December 1990. This is different to most of the other funds in the sector on account of its value investment style. At the end of June the portfolio consisted of 83 stocks, with the 10 largest accounting for 26% of the assets. These included: FirstGroup, Vesuvius, Northgate and the wealth manager Brewin Dolphin.

Aberforth is by far the largest small-cap investment trust, which means its shares are typically more liquid than most of the peer group. It has a decent long-term record with a five-year share price total return of 148% and adds diversification on account of its value bias. The shares are yielding a decent 2.2% for the sector and are trading on a discount of 12.3%.

Open-ended small-cap funds

There is a much wider degree of choice amongst the open-ended funds with FE Trustnet listing 46 in the UK Smaller Companies sector. These have generated average one, three and five-year returns of 32.8%, 42.8% and 115.4% respectively.

A good small-cap fund requires an experienced manager who is an excellent stock picker and there are several that have built up strong track records in the sector. One of the most highly regarded is Harry Nimmo, who has run the **Standard Life UK Smaller Companies** fund since it was launched in January 1997.

> **"ABERFORTH IS BY FAR THE LARGEST SMALL-CAP INVESTMENT TRUST, WHICH MEANS ITS SHARES ARE TYPICALLY MORE LIQUID THAN MOST OF THE PEER GROUP."**

Nimmo invests in companies with strong balance sheets and low levels of debt. He targets high quality businesses that can deliver sustainable growth and that have a competitive advantage with a good management team that is in for the long term.

A lot of funds in the sector are highly diversified, but Nimmo has put together a concentrated portfolio of 49 stocks. The 10 largest positions account for

38% of the assets and include the likes of NMC Healthcare, JD Sports Fashion, Dechra Pharmaceuticals, Cranswick and Fever-Tree.

Since the fund was launched in January 1997 it has returned over 1,200%, which is more than double the sector average. This has contributed to the exceptional growth in assets under management, which now stands at almost £1.4bn.

Nimmo also runs the £291m **Standard Life UK Smaller Companies Trust (LON:SLS)**, which has a similar portfolio. The recent performance of the two funds has been broadly the same, but the investment trust is more expensive with ongoing charges of 1.13% versus 0.89% for its open-ended equivalent.

Marlborough man

Another excellent small-cap manager is Giles Hargreave who runs the £1.4bn **Marlborough Special Situations**, the £137m **Marlborough Nano-Cap Growth** and the £895m **Marlborough UK Micro Cap Growth** funds.

His Special Situations fund was launched in July 1995 and invests in smaller companies, new issues and companies going through a difficult period with good recovery prospects. It operates in the smaller companies sector, but has the flexibility to take advantage of opportunities in the large and medium cap areas of the market.

The fund consists of a diversified portfolio of 201 different holdings, with the 10 largest positions including Fever-Tree, JD Sports Fashion, Dechra Pharmaceuticals and NMC Health, all of which also appear in the top holdings of Standard Life UK Smaller Companies.

At the end of May, 45.2% of the fund was invested in small cap stocks and 17.9% in the micro caps, with most of the rest in the mid-caps. The fund has returned just over 200% over 10 years.

Marlborough Nano-Cap Growth was launched in October 2013 and provides exposure to a 160-stock portfolio of micro-cap companies, with the manager only initiating an investment if the business is worth less than £100m. Its main holdings include the likes of Amino Technologies, Next Fifteen Communications, Victoria and Warpaint London.

These sorts of companies are at the higher risk, higher return end of the spectrum and have the potential to deliver considerable growth, although the fund has had a relatively slow start and is only up about 33% over three years.

His other fund, Marlborough UK Micro Cap Growth, sits in between the other two, as he will only invest in companies with a market value of less than £250m at time of purchase. This holds 271 stocks and is up 47% over three years.

FUND OF THE MONTH

The **Henderson Smaller Companies Investment Trust (LON:HSL)** was launched in December 1887 and has been managed by Neil Hermon since November 2002. It has outperformed its benchmark in 12 of the last 13 financial years and over the last five years has generated an exceptional share price total return of 178%.

Hermon is an excellent stock picker and looks for 'growth at a reasonable price'. His aim is to identify companies with good growth prospects, solid financial characteristics and strong management that are trading at a valuation that does not fully reflect these strengths. The typical holding period is five years.

The manager and his team visit over 400 companies a year to assess potential holdings first hand. There is plenty of scope as the investment universe includes the mid-cap stocks and consists of all companies with a market cap of at least £100m that are outside of the FTSE 100 index.

At the end of May Hermon had put together a diversified portfolio of 113 holdings with the 10 largest accounting for 22% of the assets. These included stocks such as NMC Health, Bellway, Melrose Industries and the Paragon Group.

Despite the economic uncertainty, Hermon believes that smaller companies' balance sheets are stronger than during the 2007 financial crisis, dividends are well supported, and there continue to be good opportunities to invest.

Henderson Smaller Companies is recommended by Numis and the manager is also highly regarded by the analysts at Winterflood. The £734m investment trust is yielding 2.1% and the shares are trading on a discount to NAV of 14.7%.

Fund Facts

Name:	Henderson Smaller Companies Investment Trust (HSL)
Type:	Investment Company
Sector:	UK Small Cap
Total Assets:	£734m
Launch Date:	Dec 1887
Current Yield:	2.1%
Gearing:	9%
Ongoing Charges:	0.44%
Manager:	Janus Henderson Investors
Website:	www.janushenderson.com

About Nick

Nick Sudbury is an experienced financial journalist and trader/investor who has worked both as a fund manager and as a consultant to the industry. He has an MBA and is also a chartered accountant.

BY FILIPE R. COSTA

THE MACRO INVESTOR

FRONTIER MARKETS

THE WILD WEST OF INVESTMENT

"There are over 100 countries in the world that don't have a proper stock market yet, so there will be new countries, but it will take time."

- Hertta Alava, fund manager for FIM Asset Management, 2017

Twenty years ago, most of the countries that became part of the group now known as emerging markets were in the process of detaching themselves from the underdeveloped world. But they are now in the process of moving towards developed world status. As an asset class, it is becoming ever more apparent that the window of opportunity is shrinking for emerging markets. What adventurous investors need is the young life blood these countries once had. They need to travel back in time just a little bit further, which means investigating a group of countries called frontier markets.

A new asset class?

Frontier markets are a sub-group of emerging markets, in the sense that they're both developing countries engaged in the process of becoming developed countries. But a frontier market is a particular type of emerging market which is more developed than the group of the least developed countries but less developed than the main group of emerging markets. Because of this status, frontier markets are sometimes referred to as pre-emerging.

In general, three groups of frontier markets can be identified. The first is composed of countries with a lower development level than emerging markets; a second group includes countries with a development level that is close to emerging markets but are just too small to be included in the group; and a third group includes countries with investment restrictions, which are in the process of loosening them.

Taking a more risk-aware point of view, we can see frontier markets as emerging markets with certain handicaps. While the degree of openness and accessibility to foreign investors is in general high, it is more limited than in emerging markets. Equity markets in these countries are characterised by small market capitalisations and low annual turnovers. At the same time, economic and political stability is below what can be found in emerging markets. All this means that liquidity risk, country risk, currency risk, and legal risk are present to a higher degree than in emerging markets.

Investment thesis

In general, higher risk should come with higher expected returns. This group of countries is in a pro-

"IF RISK IS WELL MANAGED, INVESTORS MAY FIND THAT FRONTIER MARKETS OFFER A COMPELLING COMBINATION OF YIELD AND CAPITAL GROWTH."

cess that will turn them into the new emerging markets in a few years and into the new developed countries in a few decades. They have already taken many steps to disconnect from the group of the least developed countries and offer the potential for growth emerging markets once offered. If risk is well managed, investors may find that frontier markets offer a compelling combination of yield and capital growth.

> **“IF AN EFFICIENT PORTFOLIO IS ALSO A WELL-DIVERSIFIED ONE, IT SHOULD HOLD SOME FRONTIER MARKETS EQUITIES.”**

Frontier markets are smaller and have a younger work force. They are among the fastest growing economies in the world and are going to maintain that momentum for many years, as a result of an adjustment process. GDP growth rates in countries like Vietnam, Ivory Coast, Niger, Nigeria, Mali, Guinea Bissau, Bangladesh, Slovenia and Romania, range from 5.1% to 8.2%, at a time when growth is 1.1% in France, 1.7% in Germany and 2.0% in the UK. The unemployment rate is very low in Vietnam, Niger and Bangladesh and still manageable in all the other cases. At the same time, while the developed world is plagued with negative yields, interest rates are much higher in these countries.

In terms of stability, many positive steps have already been taken. In terms of monetary policy, for example, we observe that most of the frontier markets already have a central bank that acts similarly to central banks in the developed world. These central banks pursue rigorous control over inflation, support policies to foster economic growth, bring the necessary liquidity to the market, and extend access to credit. Because internal funds are not enough to support investment needs, investors are assured that central banks in these countries will keep a very tight exchange rate policy, as a means of increasing confidence in the country for foreign investors, and thereby attracting foreign capital.

How to invest in frontier markets

Buying equities in Nigeria, Bangladesh or Mali isn't particularly easy for someone living in the UK or the US. Direct access to these markets may be costly, or indeed not possible at all. One reasonable option to circumvent the difficulties is to purchase American Depository Receipts (ADRs), which are securities listed on US exchanges that track foreign securities. But this would not only reduce the pool of investible frontier market assets, it would also lead to a deficient exposure to them.

A much better alternative is to get exposure through ETFs, which invest themselves in a diversified portfolio of frontier market equities from many different countries, and usually carry very low costs for investors. If I was writing this column 10 years ago, no ETF would exist on frontier markets. Even today, the range of options is limited, as frontier markets are often included in the

emerging markets asset class. But the few that exist are sufficient to gain a decent exposure.

One of the most important frontier markets indexes is the MSCI Frontier Market Index, which invests across 29 frontier market countries and includes 116 constituents, covering 85% of the free float-adjusted market capitalisation in each country. Consequently, this index is a very good proxy for the whole gamut of frontier market equities. The largest country exposures of the index are Argentina (20.4%), Kuwait (19.7%), Vietnam (12.6%), Morocco (7.4%), and Bangladesh (6.4%).

While not directly investible, the MSCI index serves as a proxy for some ETFs. The best example is the **iShares MSCI Frontier 100 ETF (NYSEARCA:FM)**. This ETF currently holds 131 securities, including the largest 100 market capitalisations. Because it tracks the MSCI index, its country exposure is similar to that of the MSCI index.

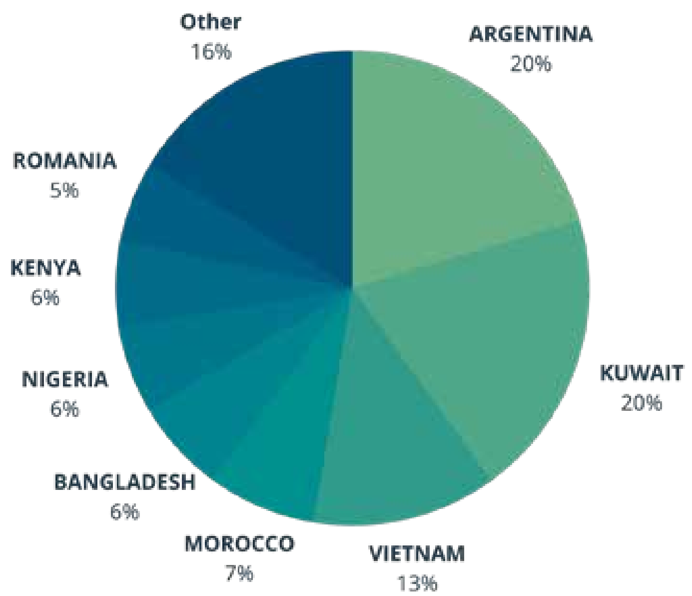
SAMPLE DATA FOR FRONTIER MARKETS

Country	GDP Growth (%)	Unemployment Rate (%)	Interest Rate (%)	1-Year Stock Market Performance (%)
Vietnam	5.1	2.1	6.50	16
Ivory Coast	8.2	5.3	4.50	-12 *
Niger	5.6	2.3	4.50	-12 *
Mali	5.2	8.2	4.50	-12 *
Guinea Bissau	5.2	7.6	4.50	--
Bangladesh	7.1	4.1	6.75	23
Slovenia	5.3	9.8	0.00	16
Romania	5.7	5.4	1.75	24

* part of the BRVM exchange

Source: Trading Economics

MSCI FRONTIER MARKETS INDEX COMPOSITION BY COUNTRY



Source: MSCI

A second option is the **db x-trackers S&P Select Frontier UCITS ETF (LON:XFSD)**, which tracks the S&P Select Frontier Index. The exposure differs from the iShares ETF because S&P has a different frontier markets country list. This fund includes equities from Pakistan, which is now considered to be an emerging market by MSCI. It additionally includes equities from Panama, which is part of standalone indexes in MSCI, and Georgia, which is not part of any MSCI indexes. The fund holds 40 constituents among 12 countries.

A third option is the **Claymore/ BNY Mellon Frontier Markets ETF (NYSEARCA:FRN)**, which tracks the BNY Mellon New Frontier Index. It seeks opportunities based on an evaluation of macro trends like GDP growth, per capita income growth, inflation rates, privatisation of infrastructure and social inequality. The ETF imposes on itself a country cap, which reduces country concentration, but gives more exposure to smaller markets.

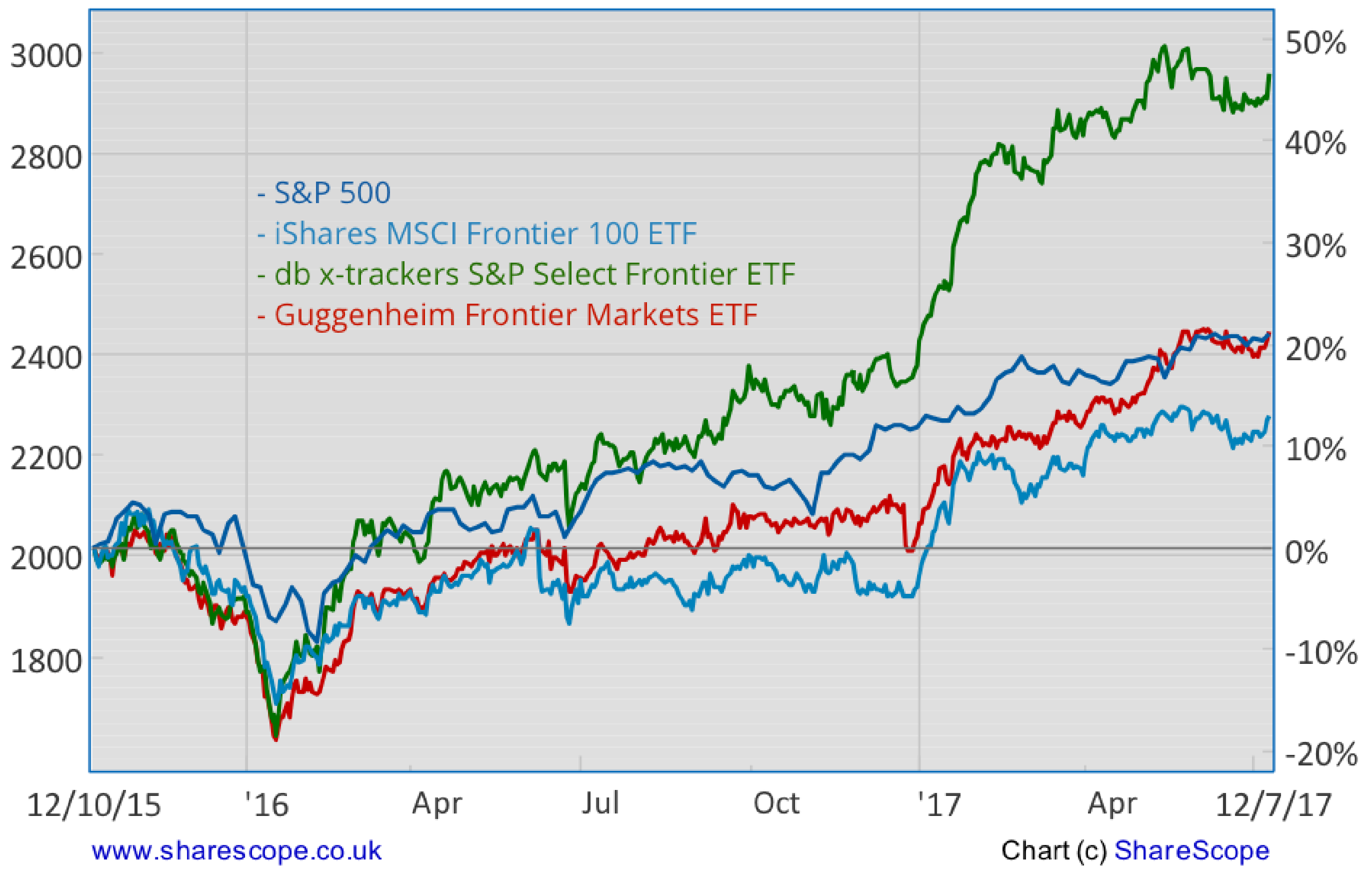
While all three options are valid, I believe the first one to be the more representative of frontier markets, as the MSCI indexes have a strong record of representativeness.

A few words on risk management fallacies

The correlation between the three ETFs considered above and the S&P 500 for the last three to five years is slightly less than 0.50, which is low enough to offer diversification benefits to any portfolio holding traditional equities. But what about correlations with emerging markets?

One way of determining correlations with emerging markets is to use the **iShares MSCI Emerging Markets ETF (NYSEARCA:EEM)**, which tracks the

S&P 500 VS FRONTIER MARKETS ETFS



performance of the MSCI Emerging Markets index. Interestingly – and supporting the thesis that frontier markets are a new and separate asset class – the correlation between the emerging markets and the frontier markets iShares ETFs are around 0.50, while the correlation between the emerging markets ETF and the S&P 500 is 0.75. This corroborates the idea that emerging markets are today closer to developed countries than to frontier markets.

"FRONTIER MARKETS ARE THE NEW EMERGING ECONOMIES."

The constitution of an investment portfolio is a two-stage process, in which a portfolio of risky assets is first chosen and later mixed with riskless assets. In the first part, it doesn't matter at all how much risk an individual is willing to take. The chosen portfolio of risky assets, in which all individuals should invest, is composed of all possible asset classes, in a way that it is not possible to improve expected return without increasing the risk level. Given the mild to low correlation of frontier markets with the S&P 500 (and even with emerging markets), adding these equities helps to achieve higher returns for the same level of risk. To that extent, frontier markets equities may be suitable for most investors.

Only in the second stage of portfolio construction should one take into consideration individual preferences and constraints, which will dictate the exact proportions of the risky portfolio chosen above and riskless bonds (or money market equivalents). Individuals at the beginning of their savings life will hold a lower proportion of bonds, and maybe even take on some leverage to amplify expected returns of the risky portfolio; whereas individuals at later stages of their savings life would reduce exposure to the risky portfolio and hold substantially more bonds.

Reducing investment risk is not the result of investing in low risk equities, but rather the result of mixing an efficient portfolio of risky equities with riskless bonds in the desired proportions. If an efficient portfolio is also a well-diversified one, it should hold some frontier markets equities.

Time to be a pioneer?

A successful long-term investment is about being able to identify the main macro trends and ignore the short-term noise. The risk profile and expected returns of an asset are not time-independent, and what sometimes appears risky in the short term becomes safer over longer periods of time. The developed world no longer offers an abundance of long-term opportunities due to the current stage of development and the ageing population. Frontier markets are the new emerging economies that have already entered an adjustment process but still offer the opportunities once offered by emerging markets. Today's less liquid small caps from frontier markets will become tomorrow's new blue chips. Through a well managed portfolio to diversify risk, investors can have access to a promising future and counterbalance the lack of good opportunities in the developed world.

About Filipe

Filipe's specialisation is monetary policy, macro issues and behavioural finance where he allies the practical experience of several years of trading with academic credentials. Filipe in fact teaches courses on Financial Markets and Monetary Economics at the University of Oporto, Faculty of Economics, helping traders maximise profits and better manage risk.

BY RICHARD GILL, CFA

FROM ACORNS TO OAK TREES

THREE SMALL CAP IPOs TO LIVEN UP A QUIET SUMMER

No long introduction from me this month. Instead let's get straight on with looking at three interesting small cap companies which have recently listed on the markets during these traditionally quiet summer months.

ANGLING DIRECT

There aren't many sports which offer the possibility of taking home dinner when you've finished playing. But angling, one of the most popular participation sports in the UK, is one of them. According to the latest survey by Sport England, 106,200 people went fishing once a week in the 12 months to September 2016. And with around 1.2 million rod licences currently issued every year, many more people are getting their tackle out at some point in the calendar.

One company taking advantage of this market, estimated to be worth around £570 million in equipment sales, is **Angling Direct (LON:ANG)**. The company, founded in Norfolk in 1986, claims to be the largest specialist fishing tackle and equipment retailer in the UK. Founders, Martyn Page and William Hill, began the business by acquiring interests in a number of small independent fishing tackle shops in the Norfolk area. But a big break-through came in 2003 when a large premises was acquired in Norwich, which was then branded under the Angling Direct name. Further acquisitions and store openings have been seen since then, with the company now having 15 retail "destination" stores around the country, supported by a 30,000 sq ft central distribution centre in Rackheath, Norfolk, which was opened in 2015.

The Angling Direct stores sell a range of over 21,500 fishing tackle products including reels, tackle, rods, bait, accessories and numerous other products to help anglers to catch a carp, snatch a salmon or hook a haddock. The company also sells a range of almost 200 products under its own brand 'Advanta', which was formally launched in March 2016. In the last financial year 45% of revenues came from the retail store network, with 42% derived from the Angling Direct website, which has a database of c.235,000 customers. The balance of sales was split between third party websites and from providing fishing tackle to the UK insurance industry for the settlement of claims under household insurance policies.

Fishing for growth

Angling Direct floated on AIM on 13th July and raised a total of £9 million in an oversubscribed placing at a price of 64p per share, with £1.6 million of that going to selling shareholders (including the founders and CEO Darren Bailey). The net proceeds to the company of around £6.6 million will be used to advance an immediate aim to build a £50 million+ revenue generating business. While the company admits in its admission

“ANGLING DIRECT INTENDS TO ACT AS A CONSOLIDATOR OF WHAT IS A HIGHLY FRAGMENTED MARKET IN THE UK.”

"CURRENT TRADING LOOKS TO BE GOING WELL, WITH RETAIL AND ONLINE SALES GROWING BY A RESPECTIVE 46% AND 71% IN THE FIRST THREE MONTHS OF THE YEAR."

document that the size of the fishing equipment market is marginally decreasing, it doesn't believe that this should hinder its growth plans.

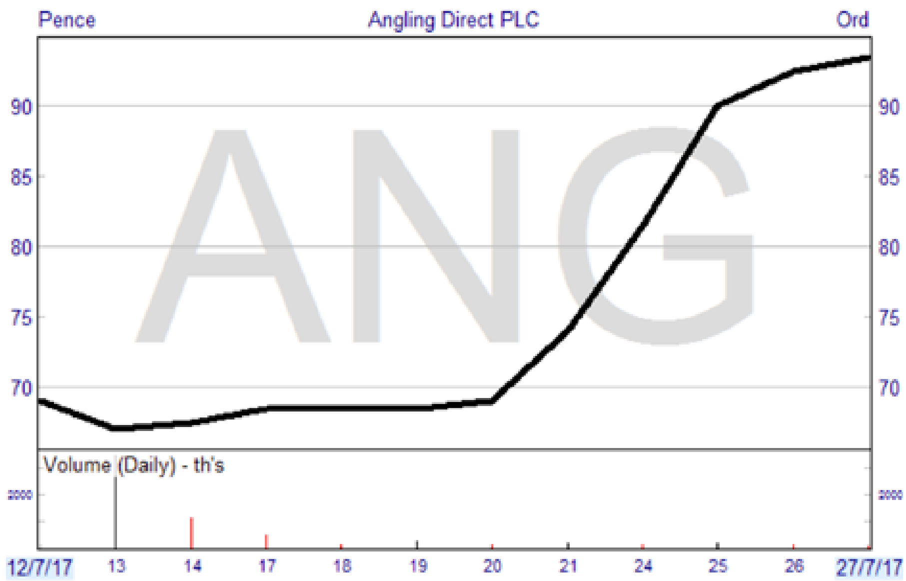
The strategy has two approaches, with acquisitive and organic growth both targeted. On the acquisitions side, Angling Direct intends to act as a consolidator of what is a highly fragmented market in the UK, with an estimated 2,300 fishing tackle retailers operating around the country. This will be supported by new store openings (three this financial year and five per annum targeted after that), along with continued investment in the website. Online sales have grown by 188% over the past three financial years, with the directors believing that the central distribution centre can support online revenue in excess of £25 million given selected further capital investment.

Angling Direct
Serious about your fishing

This strategy has worked well over the past few years, with group revenues growing by 89% to £21 million from 2015 to 2017 (financial year end January). However, due to pricing pressure and investment in infrastructure (including the distribution centre) pre-tax profits only grew by 31% over the same period to £0.56 million. Current trading looks to be going well, with retail and online sales growing by a respective 46% and 71% in the first three months of the year.

Good catch?

Shares in Angling Direct have done very well since IPO, rising by 46% to the current 93.5p. Most of these gains have come in the past week on no news and very little trading volume, suggesting the shares are particularly illiquid. However, I do see a number of attractions.



Growth over the past few years has been impressive and with the company now building up scale, being backed by good infrastructure, and having the financial resources from the IPO fundraising, it looks to be in a good position to become one of the market leaders of the angling industry. Of the money raised £1.4 million is being used to redeem preference shares. So after, accounting for net debt of c.£1.5 million as at 31st January 2017 the company should have net cash of around £3.7 million to execute its strategy.

The current market cap of just under £40 million puts the shares on a historic multiple of around 70 times. That is a high figure but I believe investors should focus on the long-term opportunities here, with the £50 million sales target providing some indication of the near to medium term potential. If that figure is achieved I believe net profits of around £2.5 million will be achievable, reducing the multiple to nearer 16 times, not bad value if current levels of growth continue. Income investors will be disappointed however as profits are expected to be reinvested back into the business, at least in the short to medium term.

On balance, while the shares are expensive at the present time, for growth investors Angling Direct is a speculative buy.

Nexus Infrastructure (NEXS)

It was a good pay day for Michael Morris and Keith Breen, respective CEO and Key Account Director at **Nexus Infrastructure (LON:NEXS)**, when they listed their business on AIM last month. The two entrepreneurs banked £28.9 million after selling a stake in the company, which they have run together for over 17 years, via a placing at 185p per share. But following the deal they still have a combined 43.1% interest in the business, which they are looking to continue growing further.

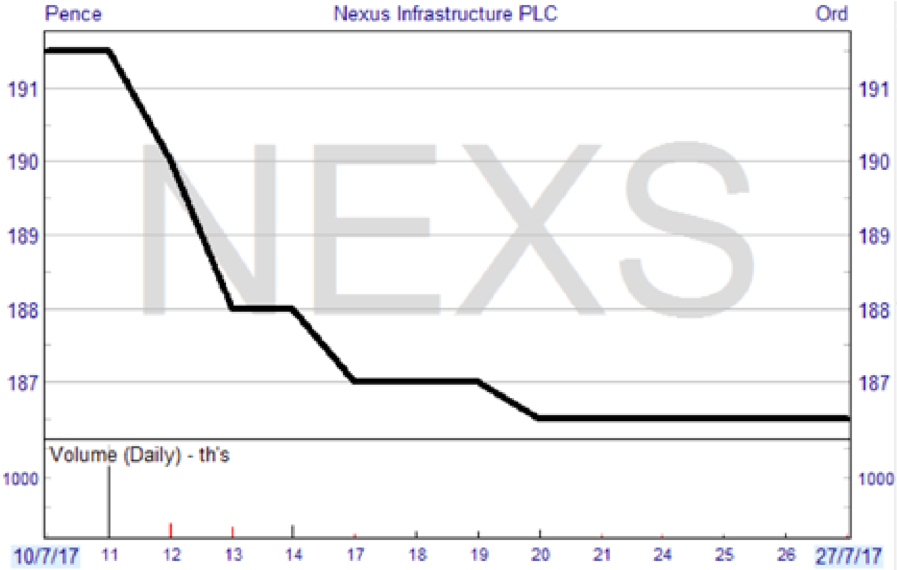
Nexus of services

With a history going back 40 years, Nexus Infrastructure is a leading provider of specialised infrastructure services to the UK housebuilding and commercial sectors. It operates via two divisions:

Tamdown – founded in 1976 this division provides a range of specialised infrastructure and engineering services to the UK housebuilding and commercial sectors. These include carrying out earthworks, remedial work, building highways, substructures and basements, creating drainage systems, as well as constructing reinforced concrete frames. It counts among its customers a number of blue-chip firms including nine of the top ten largest UK housebuilders.

Keith Breen joined Tamdown in 1985, followed by Michael Morris six years later. Then in 1999 the business saw a management buy-out backed by private equity giant 3i. From then until 3i fully sold out in 2006 the business grew revenues from £19.7 million to £52.6 million.

TriConnex – was launched in 2011 in order to take advantage of deregulation in the UK utilities sector and the structural demand for delivery of utility networks on development sites. As of today the business designs, installs and connects gas, electricity and water networks and has recently started to offer fibre connections, on residential and commercial developments. TriConnex has also seen rapid growth, increasing revenues from £2.1 million in 2012 to £23.3 million in 2016.



Building value

Nexus has a long history of profitable growth and even remained profitable during the recent recession – an impressive feat given the downturn seen in house building during that time. Between 2012 and 2016 revenues increased from £60.5 million to £135.7 million – a CAGR of 22%, with adjusted operating profits up at a CAGR of 50.4% to £11 million. However, the six months to March 2017 saw revenues slip by 5% and adjusted net profits down by 35%, with the company blaming difficult market conditions as a result of the EU Referendum causing a slowdown in tendering activity and contract delays.

Nevertheless, one of the strengths of the business is its strong order book, which has grown from £63.5 million in 2012 to £187 million as at 31st May 2017 as a result of Tamdown increasing market share and the contribution from TriConnex, which started to generate meaningful revenue in 2013. Representing 16.5 months of revenues on a historic business this provides excellent future earnings visibility.

At IPO Nexus did not raise any money for itself but already has a strong balance sheet to support its growth strategy, along with excellent levels of cash flow. Aided by advance customer payments in the TriConnex business group cash flow conversion in the last three financial years has averaged 110%. The plan is to use that cash to pay dividends (see more below) and to support a number of growth plans. These include gaining market share in existing areas, expanding into new geographic areas, taking advantage of opportunities in affordable residential and the non-residential sectors, along with considering complementary acquisitions.

On the housebuilding side there look to be many opportunities for growth, with industry body the Construction Products Association estimating that annual private housing starts in the

"NEXUS HAS A LONG HISTORY OF PROFITABLE GROWTH."

UK will increase from approximately 148,000 in 2016 (178,000 including public homes) to 158,000 (192,000 including public homes) in 2019. In utilities, the company believes that TriConnex is the first company to provide all four utility connections, with the recent deregulation in the UK utilities sector continuing to provide growth opportunities.

Safe as houses?

Having closed the first day of dealings at 191.5p Nexus shares are currently trading at 186.5p, slightly ahead of the IPO price and capitalising the business at £71.1 million. On net profits of £8.4 million posted in the last financial year that puts the shares on a very undemanding multiple of just 8.5 times. If we strip out net cash of 9.1 million as at 31st March 2017 then the multiple falls to just 7.4 times. We point out that the cash position as at 30th September 2016 was £22.6 million, the lower figure in March reflecting the seasonality of working capital.

Nexus has a progressive dividend policy, with its current intention being to pay annual dividends based on a dividend cover of 3 times adjusted net profits. An interim dividend of 2.1p per share has been announced since listing, with the ex-dividend date being 17th August. Assuming profits in the second half are in line with last year then we are looking at a final dividend of around 4.4p, implying a total yield for the year of c.3.5%.

Offering growth, value and income, Nexus Infrastructure looks like a long term buy and hold.

QUIZ

Many small cap investors will know just how much money can be made from investing in fashion retailers targeting a youth audience. Shares in AIM's largest company, **ASOS (LON:ASC)**, have risen from just over 3p to the current £58 over the past 14 years. And shares in **boohoo.com (LON:BOO)**, now AIM's second largest company, have surged from a low of 22p to 237.5p since the beginning of 2015. So it is definitely worth looking at the latest company operating in this fast growing sector to list on the markets.

Multiple choice

Founded in Glasgow in 1993, **QUIZ (LON:QUIZ)** is an omni-channel and international own brand operating in the women's value fast fashion sector. In corporate speak "omni-channel" means that the company sells online and, unlike Asos or boohoo, also has a number of physical stores. Online, the company operates through a website & apps and on the high street has 73 standalone stores and 165 concessions in the UK and the Republic of Ireland. The QUIZ brand is also present in 19 countries through 65 international franchise stores, concessions and wholesale partners.

The QUIZ brand has a focus on occasion wear and dressy casual wear, aimed primarily at 16 to 35 year olds. The company offers a range of clothing, footwear and accessories, with the strapline that it helps to, *"empower fashion forward females to look glamorous and stand out from the crowd at value for money prices."* For example, its typical customers might be looking for an outfit for going out on Saturday nights, racing days and more formal events such as weddings and proms. In the UK alone, the business targets a market which is estimated by analysts at business intelligence outfit Verdict to be worth £8 billion per annum.

Like its peers QUIZ is a fast growing business, with revenues up by a CAGR of 21% to £89.8 million between 2015 and 2017. EBITDA grew at CAGR of 30.6% to £10.3 million over the same period. Online and international channels are the fastest growing areas for the group showing respective CAGRs of 42% and 64.2%. Growth has continued to be strong since the year end in March, with sales up by 37% in the period to 31st May, with growth of 118% in the online channel and 16% across its standalone stores and concessions in the UK and the RoI.

Family Fortunes

QUIZ listed on AIM at the end of July raising a total of £102.7 million at a

"QUIZ HAS THE POTENTIAL TO DELIVER SIGNIFICANT GAINS OVER THE COMING YEARS."

price of 161p per share. This was a big pay day for the existing owners however, with £89.8 million net being banked by a number of selling shareholders including CEO & Founder Tarak Ramzan and his family. The company itself came away with a £10.6 million, the vast majority of which it is looking to invest in marketing and advertising, along with capex, working capital and broadening the product range.

Specifically, QUIZ is looking to open c.20 new stores in the UK over the next 24 months along with the same number of new concessions. Overseas, the two year plan is to open international websites in Spain, the US and Australia, standalone stores in Spain, concessions in Cyprus, the US and Central America, as well as further expand in the Middle East and the Far East, including China. Online there will be increased marketing activity, with plans to open international websites, partner with third party platforms, and develop and improve the existing mobile channel.

To support the planned growth QUIZ has recently made significant investment in its supply chain, IT systems and stores, including opening a new 180,000 sq. ft. distribution centre near Glasgow. This has helped the company to maintain a competitive advantage, as its supply chain is able to introduce new products to its stores and website within two to four weeks from the point of order and reorder successful lines quickly by focusing on very short lead times.

Deal or no deal?

As I write this article shares in QUIZ have only been trading on the markets for a few hours. But investors have taken well to the issue, with the price having advanced by 23% to 198p. That capitalises the business at £246 million.

In the last financial year the company made a net profit of £6.6 million which puts the shares on a historic PE multiple of 37 times. Given valuations in the wider sector (ASOS on a historic PE of 94 times, boohoo on 106) I do not believe that looks too stretched at all, especially given the rates of growth being seen, potential for future expansion and infrastructure recently put in place. I also note that the balance sheet is strong, with the net debt position of £2 million as at 31st March having been reversed into a net cash position following receipt of the IPO proceeds.

The policy on the dividend is a progressive one, with a one third/two thirds split between the first and second halves. Although no guidance has been given as to the level of the payment, the first dividend is expected to be announced for the second half of the current financial year.

Overall, while the shares might look fairly pricey, I believe that QUIZ has the potential to deliver significant gains over the coming years as per Asos and boohoo. Investors should be warned however that with expectations having been set high, even a small miss on market forecasts might see a sharp pullback in the shares. **Speculative buy.**

About Richard

Richard Gill is an investment analyst with over a decade's experience of analysing small/mid cap equities. Richard qualified with the Chartered Financial Analyst (CFA) designation in 2012 and was awarded PLUS Markets Financial Writer of the Year at the 2008 PLUS Awards. He has been a judge at the Small Cap Awards from 2013 to 2017.

BY SAMUEL RAE

FORENSIC FOREX

DON'T RELY ON DRAGHI TO KEEP THE EURO WEAK

The currency markets can be tough. With so many different inputs feeding into market sentiment and such a varying degree of sentiment driving buy and sell decisions, even the most carefully crafted fundamental analysis can seem futile.

The utility of technical analysis in overlooking the fundamental inputs is, to a major degree, why many traders ignore the news and events side of the equation altogether. Breaks of major levels will often precede a sustained run in the direction of the break. To the technical analyst, the direction is largely irrelevant. Courtesy of the ability to get in both long and short at the touch of a button, in the currency markets a trader can jump in on a downside break and ride it out to a predefined take profit target just as easily as he or she can open a long position on a break of a major resistance level. Even the asset in question doesn't really matter – a EURUSD long entry is no different at root to a EURGBP long when you're ignoring the real world inputs.

At core, I am a technical trader. I look for candlestick patterns at key levels to signal entries and I enter regardless of what's happening in the region that represents the currency I'm banking on, or against. I primarily focus on the major pairs not because they are more widely covered or that I have an opinion on the major economies that underpin these pairs, but because volume across the majors is consistently high and this improves the accuracy of the candlestick patterns and, by proxy, the reliability of the entries.

I have employed this strategy for many years, as regular readers of this column and of my various other works will likely already know, and it's served me well all this time. This doesn't mean fundamental analysis can't have a place in a technical trader's toolbox, however. In fact, it plays a very important role in mine.

Specifically, I use fundamental analysis to dictate one of the most important elements of my strategy, risk management. The patterns that signal entry determine the loss I stand to take if a trade goes against me (for the most part); but my fundamental analysis – and specifically, a bias I form on each of the majors ahead of time – dictates how much reward I chase. Indirectly, then, this bias also dictates my risk positioning. If I hold a bullish bias in the USD and I get a long entry signal in the USDJPY, I will enter towards a relatively wide target (say, a 2:1 or a 3:1 ratio as compared to my risk). If the same pair throws out a short signal, I will still enter, but I'll chase a 1.5:1 or a 2:1 ratio.

To illustrate this strategy in practice, I'm going to walk through a trade I'm watching out for confirmation on and highlight where both the technical and fundamental aspects of my strategy come into play.

"ANYTHING DRAGHI DOES IS GOING TO STRUGGLE TO HAVE A LONG TERM BEARISH IMPACT ON THE VALUE OF THE EUROPEAN CURRENCY."

miqu77 / Shutterstock.com

Take a look at the chart below. It's a weekly candlestick chart showing action in the EURUSD across the past thirty-six months.

Many argue right now that the strength of the Euro is centred on Draghi's actions throughout the remainder of 2017 as regards to QE. To an extent, of course, this is true, and it's an opinion I subscribed to as recently as a few weeks ago. Now, however, I believe that anything Draghi does is going to struggle to have a long term bearish impact on the value of the European currency (within reason, of course).

A spate of recent data has suggested the European economy is picking up and while the region's equity markets may be struggling based on micro inputs (German car manufacturers being accused of price collusion, for example) this weakness is very unlikely to filter through to Euro valuation. I think that the feed through of the QE programme that's been implemented over the last twelve months is going to boost the currency for the next six months at least and, if Draghi continues to go easy on the region, for the next six months after that.

So, I've got a bullish Euro bias. Now I look at the key levels. 1.1700 is a strong resistance level that has been tested and rejected twice over the last couple of years – once in October 2015 and again (almost, but close enough for rock and roll) in May last year. If the price breaks through this level, it's a major bull signal and the EURUSD will almost certainly run to 1.1800. Some will enter long on this break. I might on the lower timeframes. On the monthly chart, however, I'm waiting for 1.1800.

So here's the trade...

If I see a break of this latter level, I will enter long on the break. My stop loss is dictated by the level that I mentioned first, 1.1700. Because I'm bullish on the Euro, I will stretch to a 2:1 ratio, which gives me an upside of 200 pips and a take profit at 1.2000. For comparison's sake, if I was bearish EUR, I might chase 1.1900 at the outside.

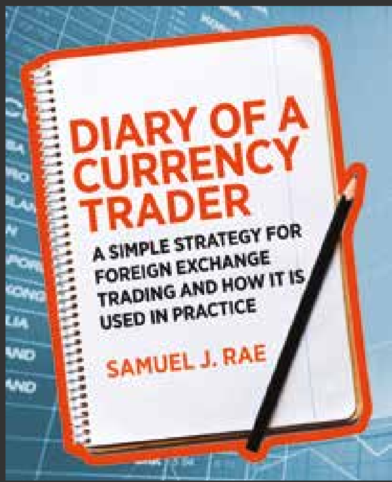
Let's see what happens.

About Samuel

Having completed his Economics BSc Degree in Manchester, Samuel Rae quickly discovered that the retail Forex industry was for him. A short foray into the corporate world drove him to search for an alternative to the more traditional ways of making a living, and in becoming a retail trader he has achieved exactly that.

Through persistent market participation and extensive education he has grown to become a specialist in both fundamental and technical analysis.

His personal trading style combines classic candlestick analysis with a simple, logical and risk management driven approach to the financial markets – a strategy that is described and demonstrated in his *Diary of a Currency Trader*.



BY DAVID JONES

CHART NAVIGATOR

WHEN CHART SIGNALS GO WRONG

BUT CAN STILL BE RIGHT

I have probably mentioned this before but I have been a technical analyst/chartist for more than 20 years. And as with many things in life, the older you get, the more cynical you become about certain things. If you are writing a textbook on charting, or selling an expensive training course, it is very easy to come up with a stack of perfect examples that worked time and again and would have delivered profits by the bucketload. You can sit there and scroll back through hundreds of historical examples to find the right chart to illustrate the principle. If only you had a time machine to go back and buy or sell...

Many chart signals end up not actually working of course. Trend lines break when they should hold, support cracks when the price is meant to bounce, and double tops often don't top. Perhaps not surprisingly there is not so much focus out there on these failures. And I think the reasons for that don't necessarily have to be particularly malicious, or an attempt to pull the wool over the eyes of the wider investing public. If you are writing about moving averages, or head and shoulders patterns, or Bollinger Bands, then you are going to tend to focus on the near perfect examples to get your point across.

But there is also some value in identifying the classic charting approaches that don't work – or at least don't work straight away. Perversely, what happens after a particular charting setup fails can actually end up *reinforcing* the initial view of a market – that has admittedly proved to be wrong so far. Like everyone else I will now go back in time to present some examples that help make that case... But hopefully, armed with the knowledge of what is meant to work and what happens when it doesn't work initially, it will add an extra angle to our trading and investing approach.

> **"PERVERSELY, WHAT HAPPENS AFTER A PARTICULAR CHARTING SETUP FAILS CAN ACTUALLY END UP REINFORCING THE INITIAL VIEW OF A MARKET."**

Let's look at a couple of basic tenets of charting. There is of course the well-worn phrase (which I completely support) "the trend is your friend". Trends are a very good thing and can last for many years. Plenty of investors and traders look to identify these trends, jump on board and hopefully ride them as far as possible. And the trendline is a popular way of identifying the trend – but when that trend line breaks, many would see that as a sign that the trend is over. This is not necessarily the case and this sort of signal can actually be an even better opportunity to get on board. Let's look at a recent example.

This is FTSE 100 banking business **Standard Chartered (LON:STAN)**. The trend shown ran from February 2016 but you can see that after March of this year progress started to stall, culminating in a decisive move through that trend line in April. Classically this would be treated as a sign that the trend is coming to an end.

But wait a moment. The share price doesn't actually know it is sitting on its trend line. The definition of an uptrend is a succession of higher highs and higher lows and, looking at that chart, we still have that. The last major high was set in February of this year and the most significant lows below that were in the 600p to 650p area. So, whilst the trend may be losing some momentum, the break of that trend line may be calling time a little bit too quickly. Perhaps this is just a buying opportunity, with the assumption that those major lows will hold again. Let's see what happened next.

That was indeed the case. The break of the trend line was the share *temporarily* losing some of its momentum – but it was not the end of the trend. The buyers came back in and at the time of writing, the Standard Chartered share price had pushed back up to those recent highs. A great example of why a classic chart pattern failing can still give us an opportunity.

On a similar theme is the break of support. This is one I have used extensively for short term trades and whilst of course it does not work all the time, it really does offer low risk/high reward opportunities where the potential gains are a multiple of the risk. Let's use a short term trading example to illustrate the point.

The chart shows the Dow Jones index – a very popular one with the thousands of short-term traders out there. Each candlestick on the chart represents 10 minutes worth of trading. The far right of the chart is 11 July 2017. It can be seen that Dow has broken a previous low – the one highlighted that was set on 6 July. This had been a big level and the market had rallied around 150 points higher from here. Plenty of people trading the Dow would be watching this level for the possibility of another bounce. The traditional approach is that if support breaks, then this is a VERY BAD THING. A level where buyers had seen value in the past and stepped in to stop any decline has not worked this time around, and the market is often expected to push lower. But, what if this doesn't happen? Already, during this ten minute period, the current candle has pushed below the support but then retreated back above – this could be the first signal that this is a false signal and we should be looking to buy rather than sell. What happened next?

Over the next 20 minutes (two candlesticks) the Dow recovered. It is looking more and more like this is a false signal so a trader viewing it this way could be a buyer, with a stop loss under that extreme low for today. As it turned out, this would have delivered a very profitable trade when we look at what happened over the next few days.

That false break marked the low point before the Dow Jones set off on yet another rally. Three trading days later it had moved more than 300 points higher – so buying after that failed break would have resulted in a decent chunk of profit versus a relatively small initial risk.

"IN A STRONG TREND, A TEMPORARY SLIP BELOW THE MOVING AVERAGE CAN BE ANOTHER OPPORTUNITY TO BUY IN."

The usual words of caution are worth reiterating at this point – no strategy works all of the time. But, even if set-ups like the above only work half the time, the gains should more than outweigh the losses.

To wrap things up, let's take a look at the perennial investor favourite, the moving average. Traditionally, when the price moves above a moving average this is a buy signal – and when the price moves below the moving average it's a sell signal. But, yet again, the share doesn't know where the moving average is! So in a strong trend, a temporary slip below the moving average can be another opportunity to buy in. Here's one to keep an eye on in the weeks ahead: **Compass Group (LON:CPG)** and its 50 day moving average.

Compass has a long term uptrend going back to 2008, but the chunk of the trend we will focus on here is from 2015, with the moving average and trend line applied.

Broadly speaking the share price has stayed above the moving average line for most of the chart – but it did have a prolonged period below it at the end of last year. However, the price stayed above the trend line, pushed back above the moving average and rallied higher still. This could be what is happening at the moment. The price has slipped below the moving average but remains well above the trend line. Added to this, it has not broken any previous lows. Of course, this time could be different – no trend goes on forever. But the recent performance has been encouraging and it could be another example where there is a low risk/high reward opportunity to buy into that longer term multi-year trend.

"WHATEVER YOUR FAVOURITE APPROACH TO CHARTING THE MARKETS, WATCHING FOR FAILURES LIKE THIS CAN STILL BE A PROFITABLE APPROACH."

You can apply this "failed/not failed approach" to many classic chart set ups, and over various time frames – as has been shown by the three examples here. For the more aggressive investor or trader this can clearly increase the number of potential trading or investing opportunities in the markets. Never forget – it is important to remain disciplined of course. In the Dow above, for example, if the index had ended up slipping back below that initial low then the trade would need to be closed for a manageable loss. But whatever your favourite approach

to charting the markets, watching for failures like this can still be a profitable approach. When plenty of people are expecting one outcome as a result of a market move, and this doesn't happen, then their view too may shift – something that you can use to your benefit.

About David

David Jones qualified as a technical analyst in 1995 and started his City career as a currency analyst. He then went on to work for trading companies CMC Markets and IG Group as Chief Market Strategist. Since leaving the industry in 2013 he has been a presenter on BBC5Live's Wake up to Money programme and the Chartist for Shares magazine. He is an active trader and private investor.

BY ALAN STEEL

DEATH & TAXES

THE GENERATION GAME

FINANCIAL PLANNING FOR MILLENNIALS

According to the bean counters at the ONS (Office for National Statistics), we're not saving enough. Apparently it's the worst UK savings ratio in 50 years. The savings ratio fell to a measly 1.7% in the first quarter of 2017, down from 3.3% in the final quarter of 2016 – and all the way down from around 10% at the time of the Financial Crisis. And "experts" think it's got something to do with Millennials spending too much. Shame on them.

Before you start panicking, this is the same ONS who a couple of years back conceded that their UK GDP quarterly reports had been wrong for the last 15 years, thanks to a calculation error. Mind you, skewed economic reporting happens elsewhere. Last month the US equivalent of the ONS admitted their original calculation of 2017's first quarter GDP growth had just been re-examined and was initially reported as 50% too low. Actually that's not what they said. They just said it should have been +1.4% instead of +0.7% and hoped we wouldn't notice the difference.

As to the UK savings ratio, when I was at secondary school a ratio was something divided by something else. So how do the ONS calculate their ratio? According to the Gods of All Knowledge (Google) it goes something like this:

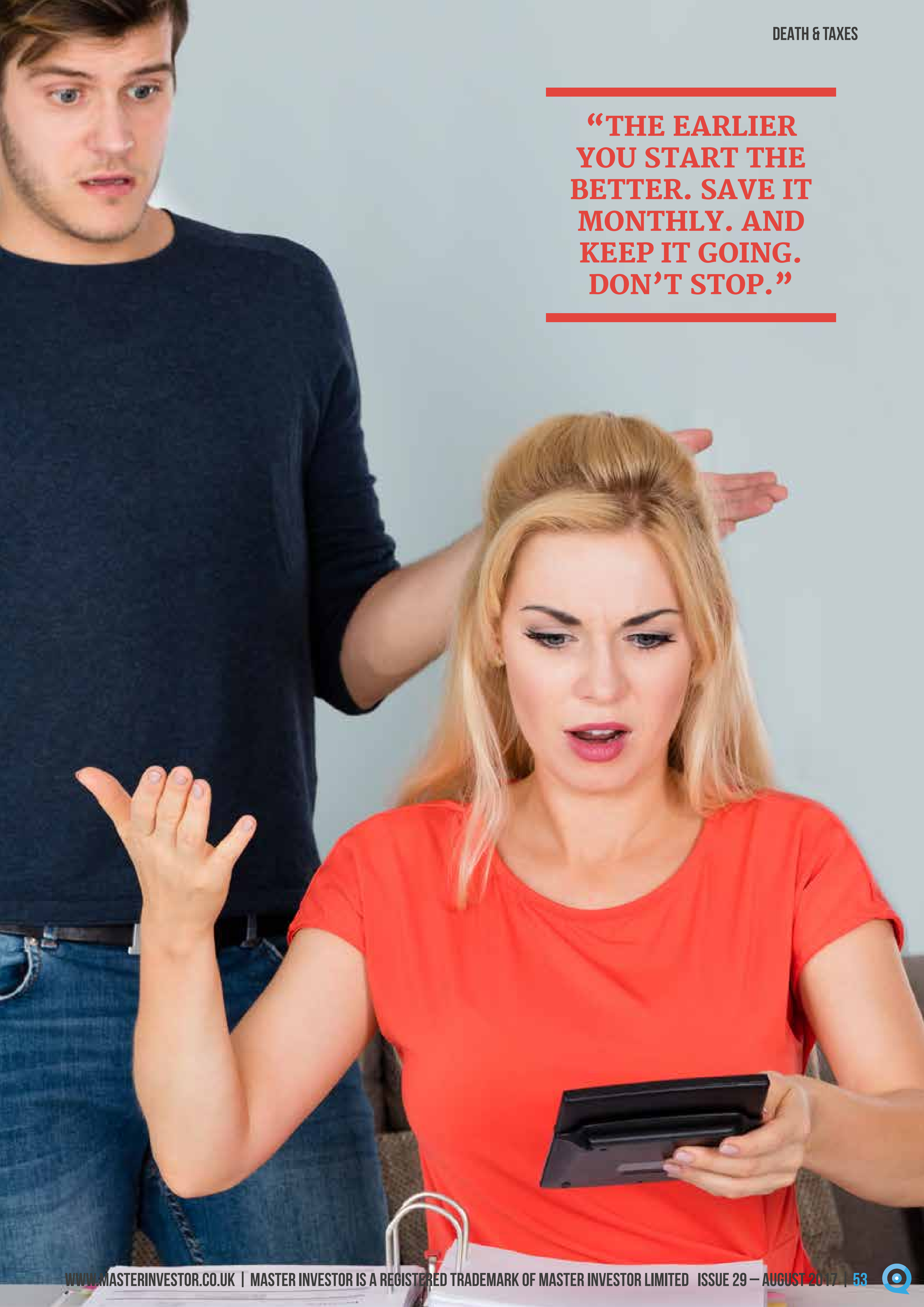
> **"NO MATTER WHAT GENERATION WE BELONG TO, HUMAN NATURE NEVER CHANGES."**

"The Savings Ratio is expressed as a percentage and is computed by dividing average household savings by average household disposable income. Both are calculated by governmental statistical organisations. Average household savings reflect the portion of average household income not spent on average current consumption and is instead invested in capital markets or used to buy assets."

So what's an asset or investment according to the ONS? Investments include stocks, bonds, bank accounts and hiding money under the mattress. Capital gains are not included. Eh? Bank deposits suddenly qualify as investments as do bitcoins stuffed under the mattress? And they don't measure increases? Really? Are they being serious?

So the low savings rate is the fault of the generation cohort now known as "Millennials", who allegedly have been short-changed by us "lucky Baby Boomers"? They say that, unlike Baby Boomers at the same age, Millennials have no money left to save. It's also reported that Millennials (formerly known as Generation Y or Echo Boomers if you're wondering where they disappeared to) were traumatised by the 2008 Great Financial Crisis. (*And we weren't by the risk of being vaporised during the Cuban Crisis when we were only 15?!*)

Not to put too fine a point on it, at their age us Baby Boomers suffered decades of high taxes, double



"THE EARLIER YOU START THE BETTER. SAVE IT MONTHLY. AND KEEP IT GOING. DON'T STOP."

digit inflation up to 26% a year, scary stockmarket crashes in 1973 and 1987, mortgage rates up to 16% and repeated recessions, not to mention constant threats of a third world war. Our university education might have been free to some, but by Jove we've paid for it big time ever since. But still some of us managed to save despite constant broken pension promises.

The generation game

When I started secondary school a good six years before "The Who" recorded their stammering defence of younger g-generations, my teachers said we were the worst class they had ever c-come across. Unruly, lazy, badly behaved, and thick as mince we were. And we believed them. Until our lovely Latin teacher let us into the big secret. Every new intake was told they were the worst ever. Sound familiar?

And he also assured us that the practice of older generations criticising their immediate successors went back at least to Ancient Greek times. And apparently it was the norm for the young to blame their elders at the same time. Nature's way, I suppose.

I have become convinced that understanding demographics is the be-all and end-all of investment success, simply on the basis that if demand exceeds supply the prices of assets will rise . And secondly, because every generation behaves the same financially at different stages of their lives – as Harry Dent showed, despite what others wrote about alleged generational differences.

"I HAVE BECOME CONVINCED THAT UNDERSTANDING DEMOGRAPHICS IS THE BE-ALL AND END-ALL OF INVESTMENT SUCCESS."

Some twenty years ago I had a long conversation with a Personal Finance editor who acknowledged my beliefs about the financial impact on economies by 47-year-olds, as first wave Boomers were then. He wanted to ask how folks in their twenties should invest. I asked him what he invested in when he was their age. Nothing, he replied. He was too busy enjoying himself. Why did he think anything had changed? OK, he said, what about thirty-year-olds then?

Same thing of course. When you're thirty-odd there's even more demands and distractions for your after-tax income. So our conclusion was that no matter what generation we belong to, human nature never changes. We behave financially exactly the same at different times in our lives. Go check. And we only think about saving for retirement when we hit our forties when we wake up to the realisation that our dream of retiring at 55 is just a pipe-dream. Nothing changes.

The fact remains though that those Baby Boomers who saved for a decent retirement income have done it the hard way. They've started saving early, forcing themselves to save first then spend what's left, and made use of all the tax breaks available with pension contributions doubled up by employers, not to mention tax free roll-up plans investing in stockmarket assets. As Yogi Berra said, "It's not rocket surgery".

Where to start?

Warren Buffett's right-hand man, Charlie Munger, said the best way to invest is to start young and instead of hoping to invest what's left after your monthly spend, first decide how much you'll save, then spend what remains. That's what I did when I was 28 and I've never looked back.

Here's a tip. Go learn The Rule of 72... now! That's the easiest way to understand the Power of Compound Interest. Albert Einstein called compound interest mankind's most important discovery. Take an investment return net of tax and divide it into 72. That's how long it will take to double your money. 0.25% per annum in a Cash ISA? 288 years to double. 10% pa? Seven years. 14%? Only five years. You choose.

According to various demographic survey definitions, Millennials are now aged between 20 and 40. Some will have student debt. To handle this well I suggest you check out Martin Lewis's excellent "Student Loans Mythbusting" post on MoneySavingsExpert.com.

As to saving, once you've decided to follow Charlie Munger's advice to start early, and got to grips with the simplicity of the Rule of 72, what next?

Keeping it simple: Some things don't change

First, a lesson from Jeff Bezos, the CEO of Amazon.com. Amazon was 22 in July, which makes it a classic Millennial company. Bezos says he's often asked what's going to change in the next 10 years, but never asked what's not going to change. And he says the second question is the more relevant of the two. I'd suggest it's even more relevant when it comes to investing. Despite being battered from all sides with "new" products and "services", the best way to invest for Millennials is to copy what worked for us Baby Boomers and for those even older than us. And keep it simple.

"WHEN YOU'RE YOUNGER YOU CAN AFFORD TO TAKE MORE RISK AND BUY FUNDS/ INVESTMENTS MORE EXPOSED TO VOLATILITY."

The earlier you start the better. Save it monthly. And keep it going. Don't stop. And how about getting others to add to your savings? Employed? Get your employer to stick away funds for you too. They'll pick up tax relief anyway – and so will you. What other investment can add up to an extra 67% a year on top of your net contribution and grows without any tax on capital profits? It's called a Pension plan. But don't let that put you off. Get an IFA to help you make sense of it all.

By the way it's reckoned some Millennials have access to up to four parents and even more grandparents thanks to the increasing divorces endured by large numbers of Baby Boomers. Go chat them up and encourage them to stick away extra contributions into your pension pots. They can put away much more than you'd think, and have their contribution for you increased by a friendly taxman. If you're paying higher rate tax you can even get some extra tax back too.

Given the generous annual allowances now available from ISAs, your generous Boomer relatives could help you stick away an extra £20,000 a year to make up for the worrying years of student debt. But be sure to have that invested properly into stockmarket funds. What about cash ISAs? I hear you ask. They're pretty useless as a long-term wealth-building vehicle these days, unless you fancy living for a couple of hundred years or more to benefit.

And what about the Help to Buy ISA? The rouble is that these are designed

"START YOUNG AND INSTEAD OF HOPING TO INVEST WHAT'S LEFT AFTER YOUR MONTHLY SPEND, FIRST DECIDE HOW MUCH YOU'LL SAVE, THEN SPEND WHAT REMAINS."

by academics with more complicated rules than a game of Quidditch. Best of luck if you can find a way to use it to your advantage in saving for a property purchase. I'd stick to the stockmarket ISA, and if you can get the oldies to cough up more, either buy a place now with a mortgage, or rent and invest even more.

But where to invest? What have I learned since 1973 as an IFA? First set up your pension plan, ISA, and other tax effective growth investments, all of which can invest in the same places and funds if you want. Dripping in monthly is better for various reasons – but mind the charges! And thirdly, when you're younger you can afford to take more risk and buy funds/investments more exposed to volatility. A rough rule of thumb is that they'll grow far more over time if you let them be. But do take advice!

Having said that, it's true it's worth having exposure to investments which roll up "income" such as dividends. Over the past 20 years the total return of the FT All Share Index was 240%. Without dividends being rolled up (i.e. the price performance alone) that falls to 77%. That means that more than two thirds of the total return is from reinvested income. Mind you, to show the benefit of contrarian fund management, Invesco Perpetual High Income net of all costs over 20 years is up almost 600% (source: Lipper stats).

Mixing equity income funds with a couple of Technology funds for Millennials could be even better. The US S&P 500 Index is over 20% exposed to the Technology sector. The FTSE 100 Index, however, has Tech exposure of less than 1%. Considering world demographics, the long-term technology wave and the probability of exponential growth over the next 20 years, tucking away some AXA Framlington Tech, or Baillie Gifford Global Discovery (to mention a couple I hold myself) wouldn't be a bad idea.

Lately there's a growing majority of investors and commentators saying you're better just sticking your savings into "cheap" Index trackers and ETFs. But "passive" investors would do well to remember the words of US expert investor Wade Slome: "If you follow the herd you will be led to the slaughterhouse."

Finally unless you have a special gift for successful investment, and a surgically removed amygdala to stop you panic buying and selling at the wrong times, I'd find a mentor to help you along the long and winding road to true financial independence. And in years to come, I hope people will b-be talkin' 'bout your wealth c-creation.

About Alan

Alan Steel rose to prominence in the financial sector after being the first person to put pen to paper to accuse Equitable Life of rampant mis-selling. A true champion of the ordinary saver/investor, Alan founded Alan Steel Asset Management in 1975, and now has over £1 billion under management. Visit the company website at www.alansteel.com.

This is the personal view of Alan and is not advice. Readers should take personalised independent advice on such matters.

BY FILIPE R. COSTA

HOW TO INVEST LIKE... JOSEPH PIOTROSKI

"I think I'm a value investor at heart."

— Joseph Piotroski

A scientific value investing approach

Finding unfashionable, oversold, unloved, boring stocks is a relatively easy task. All it requires is a stock screener selection showing shares ranked by return from lowest to highest. With the help of a few price ratios, investors can do even better and shortlist a few potential buying candidates among a list of a few thousand. One particularly useful and widely used ratio in that regard is the price-to-book ratio, which compares the market price of a share with its book or accounting value. The lower this ratio, the less an investor is paying for the company's assets, and the cheaper the stock is. When the ratio is below one, investors are paying less for the company's assets than can be obtained from selling them separately. Technically, one could say the company is worth more as a portfolio of assets than as an ongoing concern, which is usually a sign of significant undervaluation.

But while price ratios like price-to-book are useful when searching for the most unloved (if not hated) stocks, they reveal little about the reasons why such stocks have been left behind by investors. A stock may be out of favour and thus trade at relatively low prices due to a lack of momentum, an unfavourable market environment, or even as the consequence of an overreaction to some negative event. During the 1990s, for example, the traditional economy fell out of favour because of the tech revolution. Later, upon the bursting of the tech bubble, investors realised how superior traditional stocks could be.

"THE F-SCORE STRATEGY DEVELOPED BY JOSEPH PIOTROSKI HELPS INVESTORS DISCRIMINATE AMONG LOW PRICE-TO-BOOK VALUE STOCKS."

But sentiment is not always the main reason behind depressed price ratios. A stock may trade at low prices due to deteriorating future prospects. If profits are declining, the company is losing market share, margins are contracting, and there is no indication of a potential reversion, it is likely that low prices would turn into fire-sale prices some

"WHILE THE WIDER S&P 500 RETURNED AN AVERAGE ANNUAL COMPOUND RATE OF 10.06% DURING THE LAST 100 YEARS, THE F-SCORE STRATEGY CONSISTING OF HOLDING A LONG-SHORT PORTFOLIO OF VALUE STOCKS HAS RETURNED AROUND 23.00% PER ANNUM."

time soon. In such cases, the low price ratios may just reflect poor, but nevertheless realistic, expectations about the future. When using the price-to-book ratio to select value stocks, we are unable to discriminate among the very different situations mentioned above. Rather, we're relying on the law of averages, which states that some stocks will recover while others don't. But on average they are expected to outperform.

Today, I'm going to present our readers with the strategy developed by an investor and academic who solved this puzzle. First presented in a scientific paper in 2000, the F-Score strategy developed by Joseph Piotroski helps investors discriminate among low price-to-book value stocks. In contrast to the blunt tool that is the price-to-book ratio, it allows for the construction of a more selective portfolio with improved odds of a turnaround.

The strategy developed by Piotroski has been a significant contribution to academic research, providing evidence against the efficient market hypothesis and in support of the behavioural finance framework. It has also greatly served the investment community, through improving the expected annual returns from the "plain vanilla" value strategy by 8.80%.

When investing meets accounting

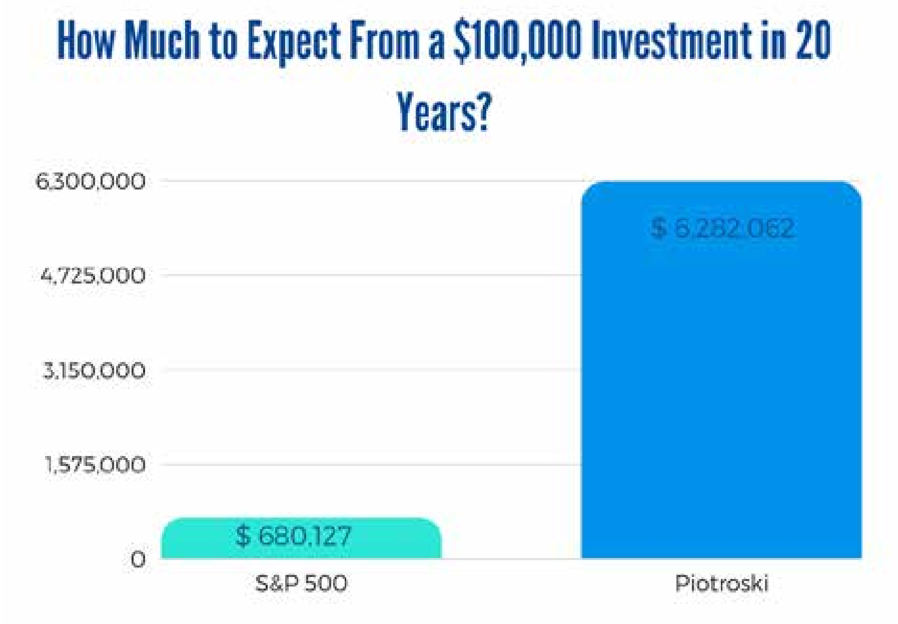
Joseph Piotroski has a background in accounting. In 1989 he obtained a bachelor's degree in the field from the University of Illinois and additionally became a CPA in the state of Illinois. He then started a career as an accountant at the firm Coopers & Lybrand, where he worked as a senior tax associate between 1989 and 1992. However, craving more learning, he enrolled with the University of Indiana to pursue an MBA in finance. While there, he lectured a course in financial accounting, which further enhanced his interests in research and teaching.

After graduating, Piotroski moved to the University of Michigan, where he served as a senior research assistant and graduate instructor between 1994 and 1999 and received his PhD in accounting. His research would culminate with publication in the Journal of Accounting Research in 2000, under the title "Value Investing: The Use of Historical Financial Statement Information to Separate Winners from Losers". The paper describes a value investing strategy that is today known as the Piotroski 9-Point F-Score, or simply the F-Score. Mostly unknown at first, Piotroski's work was later promoted by Forbes, Bloomberg and other financial outlets, extending its reach from the academic community to the investment community.

Piotroski left Michigan in 1999 for the University of Chicago, where he took a position as an assistant professor of accounting. While at Chicago he became associate professor of accounting. In 2007 he moved to Stanford University to take a similar position. Although Piotroski is still more of an academic than an investor, his F-Score strategy is one of the most valuable investment strategies, one that has often been reported to outperform market averages by a large margin, even during the Financial Crisis. While the wider S&P 500 returned an average annual compound rate of 10.06% during the last 100 years, the F-Score strategy consisting of holding a long-short portfolio of value stocks has returned around 23.00% per annum. Over a period of 20 years, an initial investment of $100,000 would have grown to $680,127 if invested in the S&P 500 and to $6,282,062 if invested according to the F-Score strategy.

Piotroski's F-Score strategy

While the price-to-book ratio is a good way to shortlist buying candidates,



Notes: calculations based on a CAGR of 10.06% for the S&P 500 (average of the last 100 years) and a CAGR of 23.00% for Piotroski (obtained from Piotroski research)

it's still insufficient as an investment strategy. Although several academics have shown the superiority of such a value strategy, 57% of the selected companies tend to underperfom over a period of two years. Further discrimination is therefore needed to sort between strong and weak companies.

The main aim of Piotroski was to investigate whether a financial statement-based heuristic, when applied to out-of-favour stocks, could discriminate between companies with strong prospects and companies with weak prospects, such that it could enhance the mean portfolio returns obtained by a value strategy based on selecting stocks with low price-to-book value (in the academic world: high book-to-market value). Value investors like Ben Graham (issue 13 – April 2016), analyse financial statements thoroughly, as a way of filtering the noise out of the data. But such an operation always requires a high degree of expertise and unlimited resources. The beauty of Piotroski's strategy is that it can be much more easily implemented.

Piotroski identifies nine fundamental signals to measure three important areas of a company's financial condition: profitability, financial leverage/liquidity, and operating efficiency. Each signal is interpreted in a binary form, as being either "good" or "bad" depending on its implication to expected future performance, which is converted to a value of one or zero respectively. The aggregate signal measure, named F-Score (originally F_Score), is the sum of the nine binary signals. This aggregate signal is designed in a way to measure the overall quality or strength of a company's financial position. The higher the number, the stronger the financial position. The final decision to buy should rely on the strength of the number, with a value of 8-9 being a strong buy signal, and 0-2 a strong sell signal (the exact cut-offs may be tweaked to reflect market conditions and industry specificities).

The first group of signals are aimed at measuring profitability. Historical records show that value firms generate poor profits in general and are often unable to finance their investment operations internally. The aim of Piotroski here is to identify those companies which are able to generate funds from their operations or that, at the very least, have seen their position improve of late. Piotroski uses several variables to measure profitability: return on assets, cash flow from operations, change in return on assets, and accruals.

"MOSTLY UNKNOWN AT FIRST, PIOTROSKI'S WORK WAS LATER PROMOTED BY FORBES, BLOOMBERG AND OTHER FINANCIAL OUTLETS."

1) Return on assets

The first profitability measure comes from the evaluation of return on assets, which is defined as the net profit obtained by the company before accounting for extraordinary items, scaled by total assets at the beginning of the year. When return on assets is positive, the signal is "good" and a score of one is attributed. If return on assets is negative, the signal is "bad" and a score of zero is given.

2) Operating cash flow

The second measure comes from the cash flow statement, and measures cash flow from operations, which is defined as cash generated from operations scaled by total assets at the beginning of the year. If the figure is positive, then the company is generating funds internally and a score of one is given. If the company is depleting its cash reserves, the score attributed to the signal is zero.

3) Change in return on assets

Piotroski wants not only to capture a financial picture but also its changing dynamics. For this goal, he includes the change in return on assets. If return on assets increases from one year to another, a score of one is given, otherwise a score of zero is recorded.

4) Accruals

In general, the profits achieved by a company should translate into cash generated from its operations. But sometimes companies inflate current profits at the expense of future profits through positive accruals. In the specific case of distressed companies and/or companies that in some way have been sold down, the incentive to do it is greater (to prevent covenant violations, to help raise more money etc.). One way Piotroski learned to detect this kind of situation was by comparing cash flow from operations to return on assets. The accruals variable is equal to the current year's net income before extraordinary items less cash flow from operations, both scaled by total assets at the beginning of the year. When accruals are greater than zero, cash flow from operations is less than return on assets, which is a bad signal, and translates into a score of zero. When the opposite situation occurs, the score is one.

A second group of variables is composed by signals aimed at measuring leverage, liquidity and source of funds. These measures identify changes in a company's capital structure and its ability to meet future debt service obligations. As most value firms are financially constrained, Piotroski assumes that increases in leverage, decreases in liquidity and the use of external financing are in general "bad" signals. Three variables are considered by Piotroski, as presented below.

5) Change in leverage ratio

This variable should measure changes in long-term leverage. Piotroski measures leverage as the historical change in the ratio of total long-term debt to average total assets. When positive, the score is zero and when negative the score is one.

6) Change in liquidity (or current ratio)

An improvement in liquidity is assumed to be a "good" signal about the company's ability to service current and future debt obligations. Piotroski measures a change in liquidity as a change in the current ratio. When positive, the score is one; when negative, the score is zero. The current ratio is defined as the ratio of current assets to current liabilities at fiscal year-end.

7) Change in the number of shares

In general, it is not wise to raise equity when share prices have been falling, because the cost of equity is very high at such a time. The only reason to raise capital under such conditions is due to an inability to generate sufficient internal funds to service current and future obligations. This fact highlights a poor financial condition: otherwise the firm wouldn't be issuing equity at such unfavourable conditions. The signal gets a score of one when no common equity is issued during the year, and zero otherwise.

The last group of variables is an attempt to measure changes in operating efficiency. The measures target the decomposition of a change in return on assets, and include the following two signals/variables:

8) Change in gross margin

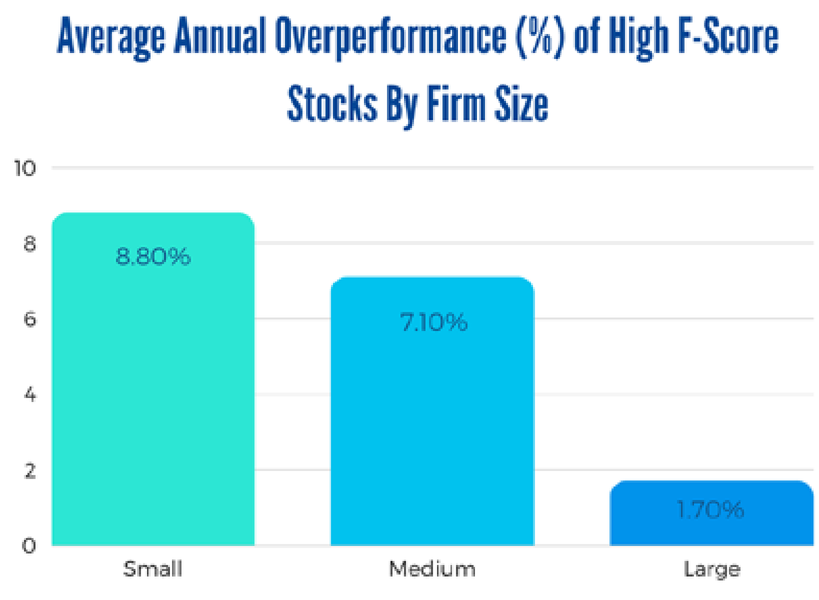
One way of improving the return on assets is by extracting more value from each unit sale. That may be the result of increasing sales prices, falling factor costs, or falling inventory costs. Piotroski attributes a score of one, when the change in gross margin is positive, and zero otherwise. He measures this change as the current gross margin ratio (gross margin scaled by total sales) less the prior year's gross margin ratio.

9) Change in asset turnover ratio

A second way of improving the return on assets is by means of selling more for each unit of assets. Put another way, the company is able to generate more sales for the same assets, or the same sales with less assets. When this happens, operating efficiency is improved, and a score of zero is given. Piotroski measures a change in the asset turnover ratio as the current asset turnover ratio (total sales scaled by total assets at the beginning of the year) less the prior year's asset turnover ratio.

The final aggregate F-Score results from summing-up the individual binary scores varies between 0 and 9. Piotroski's research shows that the greater the score the higher the expected returns, meaning that investors can unfold a strategy of buying stocks with scores between 8 and 9 and selling stocks with scores between 0 and 2.

The above 9-point F-Score strategy should be applied to a pre-filtered list of stocks. "I show that the mean return earned by a high book-to-market investor can be increased by at least 7.5% annually through the selection of financially strong high book-to-market firms while the entire distribution of realized returns is shifted to the right", Piotroski claims in his research. That means that the strategy is aimed at fine-tuning an already filtered list filled only with high book-to-market companies (low price-to-book value ratios). The first step, before applying the F-Score, is to rank stocks by their price-to-book value ratio, from lowest to highest and select only the first quintile (top 20% of the list). Piotroski analysis starts just after this preliminary selection. As a final step, investors can also apply a filter to select only small to medium-sized companies, as Piotroski demonstrates that these are the stocks usually offering the largest returns.



Source: Adapted from Piotroski (2000, p.19)

PIOTROSKI 9-POINT F-SCORE

1. **RETURN ON ASSETS**
   1 point if it is positive in the current year, 0 otherwise.
2. **OPERATING CASH FLOW**
   1 point if it is positive in the current year, 0 otherwise.
3. **CHANGE IN RETURN OF ASSETS**
   1 point if it is higher in the current year compared to the previous year, 0 otherwise.
4. **ACCRUALS**
   1 point if it is negative in the current year compared to the previous year, 0 otherwise
5. **CHANGE IN LEVERAGE RATIO**
   1 point if the ratio is lower in the current year compared to the previous year, 0 otherwise
6. **CHANGE IN CURRENT RATIO**
   1 point if it is higher in the current year compared to the previous year, 0 otherwise.
7. **CHANGE IN THE NUMBER OF SHARES**
   1 point if no new shares were issued during the last year.
8. **CHANGE IN GROSS MARGIN**
   1 point if it is higher in the current year compared to the previous year, 0 otherwise.
9. **CHANGE IN ASSET TURNOVER RATIO**
   1 point if it is higher in the current year compared to the previous year, 0 otherwise.

▲ SCORE 8-9 strong score

▼ SCORE 0-2 weak score

"ALTHOUGH PIOTROSKI IS STILL MORE OF AN ACADEMIC THAN AN INVESTOR, HIS F-SCORE STRATEGY IS ONE OF THE MOST VALUABLE INVESTMENT STRATEGIES."

Developing a strategy in the real world

While it sometimes may be hard to find equities with a very low price-to-book value ratio, in Piotroski's world it would never constitute a problem because his strategy is set in relative terms. The data is initially split into quintiles, ranked from the lowest price-to-book value ratio to the highest. Only the top quintile of data is selected, that is, only the 20% with the lowest price ratios. This step is absolutely crucial. All Piotroski's research departs from a top quintile selection of equities, which corresponds to the "naive" value investing case.

The next step is to apply the 9-step Piotroski strategy and rank the results using the calculated F-Score. This score can be obtained programmatically using either an online screener or some investing software package. In general, stocks with an F-Score between 8 and 9 are buy candidates, and stocks with a score between 0 and 2 are sell candidates. This strategy adds on average 7.5% in annual returns over the naive strategy (based on the 1976-1996 backtests conducted by Piotroski). But, as mentioned above, investors can still do better if further trimming the data sample to smaller companies. Piotroski shows that such a strategy enhances annual returns to 8.8% above the naive strategy. The simpler way of trimming the data is by arbitrarily choosing a cut-off value based on common sense and experience about what constitutes a small cap. More refined ways may involve splitting the data into terciles, ranking stocks by market capitalisation from lowest to highest, and choosing as cut-off the value of the first tercile.

An Application of Piotroski's F-Score to UK Shares

Asset	Market Cap. (£m)	F Score	Price to Book	Proximity to 52-Week High	Change (%) Relative to ASX	Industry
Anglo Asian Mining	21.4	8	0.30	0.21	-3.3	Basic Materials
Serabi Gold	31.4	8	0.60	0.14	-18.2	Basic Materials
Sylvania Platinum	26.1	8	0.40	0.26	-3.3	Basic Materials
Real Good Food Company	25.6	8	0.30	0.50	-21.7	Consumer Goods
Caffyns	13.1	8	0.50	0.00	-12.7	Consumer Services
Real Estate Investors	106.3	8	0.90	0.43	-2.0	Financials
Omega Diagnostics Group	21.5	8	1.00	0.34	9.2	Health Care

Source: Sharescope

The list that follows is an example of the application of Piotroski's strategy on LSE equities. Seven stocks are selected, all with an F-Score of 8 and with market capitalisations ranging from £13.1m to £106.3m. Notice that all the companies are currently priced far away from their 52-week high, which reflects their out-of-favour momentum.

Final remarks

Piotroski's approach is a relatively simple application of fundamental analysis to rank oversold, low price-to-book companies, in terms of their overall profitability, liquidity and operating efficiency, to then be able to select a portfolio with improved expected returns. Piotroski has built a strong accounting-based value investing approach on top of the more naive strategy consisting of unconditionally buying low price-to-book stocks.

Piotrioski's approach shifts the distribution of returns earned by an investor, adding up to 8.80% to the average performance of the more naive low price-to-book strategy, when an investor selects only small companies with the highest F-Scores.

From the perspective of an individual investor, who is always constrained in terms of available resources, Piotroski's strategy is highly valuable, because it doesn't require a deep and thorough analysis of thousands of financial statements. With the help of good software, which may cost between £25 – £125 per month, any investor can implement Piotroski's strategy.

About Filipe

Filipe has been a contributor to Master Investor since the earliest years. His specialisation is monetary policy, macro issues and behavioural finance where he allies the practical experience of several years of trading with academic credentials. Filipe in fact teaches courses on Financial Markets and Monetary Economics at the University of Oporto Faculty of Economics, helping traders maximise profits and better manage risk.

BY CARL SHAVE

BRICKS & MORTAR

REIT VS BUYING TO LET IN A POST-BREXIT WORLD

Property has long been seen as one of the safest forms of investment and, on the whole, is likely to continue to be so. However, recent political upheavals in the UK mean that more thought needs to be given before jumping on the property gravy train as we once would have. Britain's vote to leave the European Union – and this year's hastily called General Election – mean uncertainty in the coming years. That uncertainty will inevitably affect the wider economy and, more specifically, the property market.

There are currently two principle ways to invest in property in the UK. The first is to buy shares in a real estate investment trust (REIT). The other is to invest directly in buy-to-let property. The former largely invests in commercial and retail property, while the latter tends more towards residential property, but neither is set in stone. Each has its advantages and drawbacks – but how are REITs and buy to let likely to be affected by the uncertainties of Brexit?

REITs

REITs are a relatively new form of property investment in the UK, first legislated for in the Finance Act 2006. They are companies or groups of companies – which must be listed on the stock market – that manage a property portfolio to generate profits for shareholders. REITs enjoy a special corporation tax exemption on rental profits, in exchange for which they must comply with a number of rules – including a requirement to pay out 90% of property income to shareholders annually, and that investors' dividends are treated as property income and taxed accordingly.

The market reacted unfavourably in the immediate aftermath of last June's Brexit vote. The FTSE NPRA/NAREIT UK Index – representing the UK real estate AIM market – was down 15.63% by mid-July 2016, with the main REITs – including British Land, Derwent London, Great Portland Estates, Hammerson, and Land Securities each down between 13% and 24%. The Index has been turbulent since, with a limited recovery of 5.56% from July 2016 to July 2017.

Still, many investors believe there is an inherent stability in REITs that prevailing economic and political factors might rattle, but will not shatter. With strong balance sheets and low leverage, dividend yields are favourable when compared to a 10-year government gilt bond, and it's clear that some investors have taken advantage of the post-referendum share price drop to invest in REITs.

This is a sector that UK and international investors continue to monitor closely. The property market overall hasn't reacted well to the Brexit decision, and lower property prices post-

"DESPITE THE PROPERTY MARKET AND STOCK MARKET UNCERTAINTIES THAT BREXIT INTRODUCES, REITs HAVE SHOWN THEMSELVES TO BE RESILIENT AND ARE LIKELY TO CONTINUE TO BE SO."

Brexit – other than in areas that are widely accepted to have been in a sustained price bubble, such as parts of London – could be good news for REITs looking to expand their portfolios.

Some analysts have argued that there is also an inherent flexibility in REITs. The property market isn't a single, homogeneous entity but rather comprises a variety of sectors with their own flows in demand, price and profitability. In the past few years REITs have been seen to take an agile approach; either spreading investment across sectors to mitigate uncertainty, or alternatively focusing on a single profitable sector. Hammerson, for example, sold its office property portfolio in 2012, in favour of focusing on its retail properties.

Overall, despite the property market and stock market uncertainties that Brexit introduces, REITs have shown themselves to be resilient and are likely to continue to be so. Their potential for investing in different property sectors provides a degree of stability, and future property market conditions may even allow the potential for cautious growth.

Buy to let

Direct investment in buy-to-let property is a different kettle of fish. Even if you don't manage your let properties yourself, it is often a more hands-on job than the invest-and-forget option of REITs. While REITs are likely to go through Brexit against a relatively stable backdrop of taxation and regulation, buy-to-let investors will have to deal with it in the context of recent changes to tax rules, which limit the amount of tax relief that can be claimed against mortgage interest. As most buy-to-let investors operate in the residential sector, they may also be more exposed to post-Brexit house price fluctuations than investors in REITs.

There are a number of factors that could work in favour of buy to let. Brexit uncertainty is – for now – undoubtedly doing its part in keeping interest rates low, and the availability of relatively cheap mortgage finance, in combination with a moderate drop in house prices, could present opportunities for investors to build their portfolios.

"DEMAND FOR HOUSING IS CONSTANTLY GROWING, AND IN THE ABSENCE OF A SHARP INCREASE IN HOUSE-BUILDING THIS COULD LEAD TO A GREATER DEMAND FOR RENTAL PROPERTY – GOOD NEWS FOR BUY-TO-LET INVESTORS."

It is demand for rental property that could be the factor that makes or breaks the buy-to-let sector after Brexit. Uncertainty in the property market means that both buyers and sellers are reluctant to make a move until a clearer view of the future economic landscape emerges. At the same time, demand for housing is constantly growing, and in the absence of a sharp increase in house-building this could lead to a greater demand for rental property – good news for buy-to-let investors, provided rent increases don't outstrip tenants' ability to pay in the post-Brexit economy.

On the other hand, rental demand might be affected by other demographic shifts that could occur following Brexit. At present, immigrants are three times more likely to rent property than UK nationals, and tougher controls on immigration – or simply smaller numbers of foreign workers and students willing to stay in the UK – could have a very real impact on demand. Reduced rental demand – especially if combined with interest rate hikes – could lead to some investors defaulting on their buy-to-let mortgages. With buy to let accounting for one in five mortgages, this would potentially be disastrous for the wider housing market and economy.

A final consideration for buy-to-let investors is the recent changes to taxation and stamp duty. The former means that it's now only possible to claim tax relief on mortgage interest at the basic 20% tax rate, even if you are a higher or additional-rate taxpayer. A 3% surcharge also now applies to Stamp Duty Land Tax (SDLT) on buy-to-let properties and second homes. These factors, in combination with Brexit-related uncertainties, may give some potential investors pause when considering buy to let as an option. However, one potential solution is to operate your buy-to-let business as a limited company, rather than a personally owned venture. Not only does this mitigate the recent change in tax rules, it would deliver further efficiencies due to the corporation tax rate reducing to 17% in 2020.

About Carl

Carl is a seasoned commentator on financial matters and one of the minds behind Just Mortgage Brokers. He has worked in the mortgage industry for over 20 years, first working for a high street lender, before departing to setup and run his own branch of mortgage brokers 15 years ago.

JULY 2017

BEST OF THE BLOG

Austerity – or Catastrophe...?

The minority UK Conservative government is under pressure to loosen the fiscal purse strings. Does that mean the dream of balancing the budget remains no more than a dream? Who would benefit? Will taxes have to rise? And what are the risks? Cardiac arrest in the Gilts market is a real possibility.

Boris Johnson opines that the public sector pay cap of one percent per annum should be scrapped. Michael Gove believes that the British people need a break. Numerous other Tory luminaries have also recently told Chancellor of the Exchequer Hammond that he should ease up on closing the deficit and cut the nation some slack. In other words – borrow more than he is borrowing already and bung some dosh in the direction of local government, the NHS, and any other spending department with a sob story to tell.

Since the election, the Tories, still in government but clinging on for dear life, are running scared. Some think that they might buy popularity – and time – by easing up on the aim of balancing the books by 2025. This

"IN SIGNALLING AN END TO AUSTERITY BORIS & CO. ARE STEALING THE OPPOSITION'S CLOTHES."

objective, and the cheese-paring of spending commitments associated with it, generally goes by the name of *austerity*.

In the current climate, every tower block that goes up in flames, every tardy ambulance, every bungled criminal investigation by the plods and every delayed and overcrowded train are blamed on austerity. Almost any imaginable administrative cock-up has the same cause.

In signalling an end to *austerity* Boris & Co. are stealing the Opposition's clothes. Labour and their Green sidekicks loathe austerity, full stop. The Scottish Nationalists, with Presbyterian righteous indignation, regard austerity as a moral abomination. The Lib Dems think it would be jolly nice if there wasn't quite so much of it.

How did we get here?

By Victor Hill

Click here to read the full article

The UK technology trust delivering market-beating returns

Technology is transforming the world and changing the way we do things. Until a few years ago developments like robotics, artificial intelligence and virtual reality were rarely to be found outside of science fiction, but many of them are now part of our everyday lives.

Investing in companies at the cutting edge of these new technologies offers a high return/high risk profile that might be suitable for younger investors with an active interest and good working knowledge of these areas.

The main danger is if the hype gets ahead of the reality, as is the case with some of the giant US tech companies and in particular the FANG stocks – Facebook, Amazon, Netflix and Google (now Alphabet) – where valuations have been bid up to ridiculous levels.

Fortunately it is a very different picture on this side of the pond where many small British tech companies have the potential to deliver structural growth in a low-growth world.

One of the easiest ways to benefit is the **Herald Investment Trust (LON:HRI)**, which delivered 40% growth in NAV over its financial year to the end of May and whose shares are trading on a 19% discount.

Katie Potts, the manager of the £911m fund, is in the enviable position of having the cash available to help finance expanding listed tech companies. She has been meeting two or three a day, but has been exercising caution with a total of 30 deals completed last year and a further 38 YTD.

By Nick Sudbury

Click here to read the full article

"MANY SMALL BRITISH TECH COMPANIES HAVE THE POTENTIAL TO DELIVER STRUCTURAL GROWTH IN A LOW-GROWTH WORLD."

2 of the best UK-focused recovery stocks

Recovery stocks can be among the most profitable investments. One reason for this is that the market usually expects disappointing financial performance from them, which generally means low valuations. If the companies in question are able to beat market forecasts and deliver a sustained turnaround, it can lead to above-average valuations. The end result is often a high profit for investors.

One recovery theme for the long term could be UK-focused companies. The UK economy faces perhaps its biggest challenges since the financial crisis due to Brexit, and stocks which rely on it for the bulk of their revenue could see their financial performance suffer.

Within this theme, retailers may offer the most significant recovery potential. CPI inflation has hit 2.9%, which is 1.1% above wage growth. Historically, an inflation rate which is significantly ahead of wage growth causes consumer spending to come under pressure. Individuals will either hold back on spending on a wide range of discretionary items, or trade down to cheaper options on consumer staples.

The effect of this on retailers can be devastating. In search of higher sales, an investment in pricing often follows. While this may help support like-for-like (LFL) sales for a time, the effect on margin can be negative. Alternatively, retailers seeking to maintain margins are likely to see sales fall as their rivals slash prices in a bid to appeal to consumers who are becoming increasingly price conscious.

By Robert Stephens, CFA

Darren Grove / Shutterstock.com

Click here
to read the
full article

Are women better traders and investors than men?

Back in 2015, when I was raising funds for my FinTech start-up CityFALCON, I mentioned that our most active user on the platform was a woman who traded from home while her family was out. I would never have imagined the reaction that I got then: "this clearly can't be one of your target audiences"; "you need to focus on professional traders and investors".

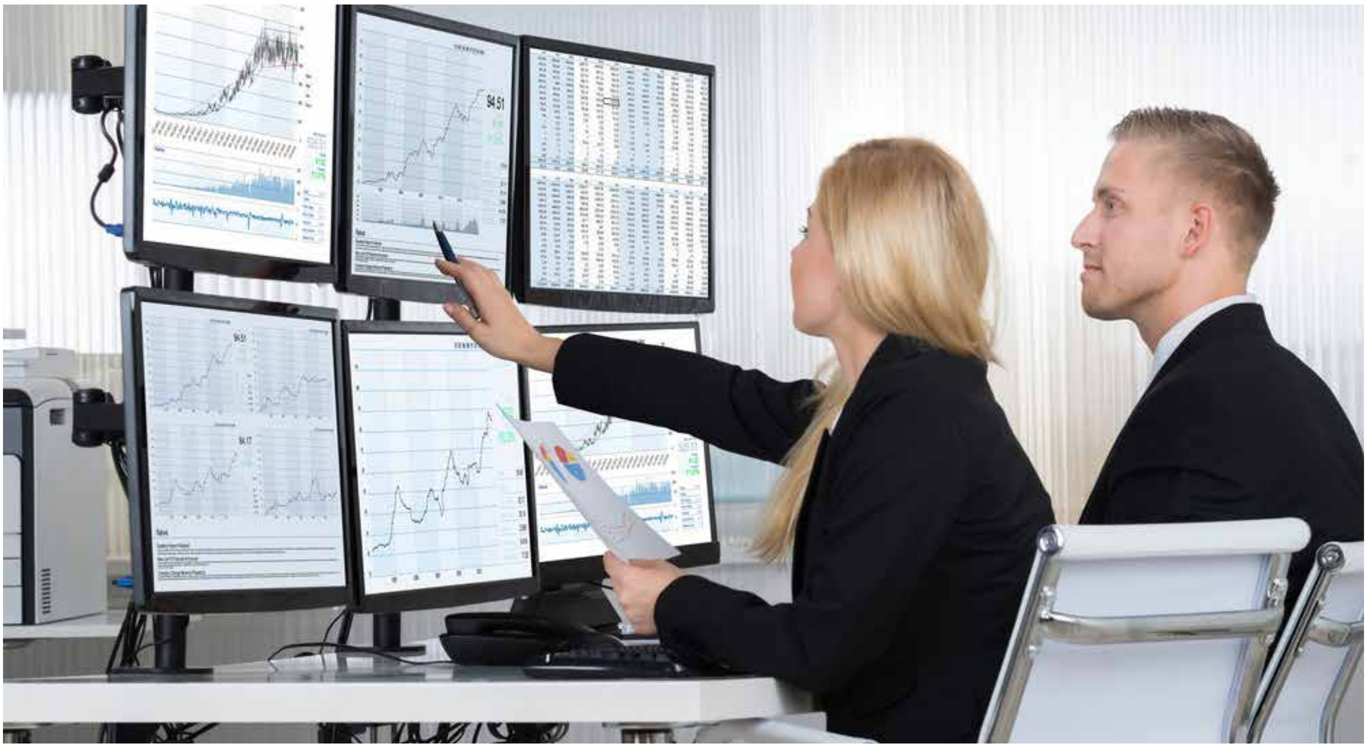
Investors and traders hail from all sorts of backgrounds. Some are professionals, working as full-time traders in gleaming skyscrapers, spending most of their time analysing stocks and news. Others are professionals, but work from home. Others are quite passive, only checking their stocks once a quarter, and they spend most of their time working other jobs. Some are old, some are young. Some are interested in making a profit as fast as possible, not caring about the companies, while others are there for the dividends and to share in the profits of companies they believe in.

One demographic that is often overlooked in trading is the difference between the sexes. On Wall Street and in Canary Wharf it is common to see men in business suits that trade and make deals. That is certainly the stereotype, at least. The numbers agree as eFinancialCareers pegged female traders to comprise 15% of all traders at investment banks. Among the world's greatest investors, there is simply no female representation at all. So why is that and how is it changing?

The first and most obvious answer is that, in the past, women had a particular role to play, and it wasn't in the workplace. So that explains the 20th century. In the 21st century, though, most jobs that are open to men are open to women, and expectations are changing. If a man can do the job, so can a woman. Since finance tends to fall under "STEM", especially for quantitative roles like trading and investing, it seems there is a trend of women not being well-represented generally.

By Ruzbeh Bacha

Click here
to read the
full article



BY RICHARD GILL, CFA

READ TO SUCCEED

SUPER INVESTORS

LESSONS FROM THE GREATEST INVESTORS IN HISTORY FROM JESSE LIVERMORE TO WARREN BUFFET & BEYOND

BY MATTHEW PARTRIDGE

Since the Great Financial Crisis, the active fund management industry has come under increasing levels of criticism over the ability of professional fund managers to do what they are paid to do – beat the market. Study after study has shown that active managers fail do this on a consistent basis, with their performance often getting worse as time goes on. To take just one example, in 2016 just 42 out of 259 (or 16%) of funds in the IA UK All Companies sector managed to outperform the benchmark FTSE All-Share Index. So it's no surprise that private investors are shunning the highly paid, poorly performing managers in favour of low cost and often better performing index funds.

But surely if there are a select handful of professional investors who manage to consistently beat the market over time, their strategies are well worth examining. This is exactly what author Matthew Partridge does in *Super Investors*.

Partridge plies his trade as a financial journalist, writing for MoneyWeek magazine. He is also a trained historian, completing a degree in economics and history at the University of Durham, before doing a masters and a doctorate in economic history at the London School of Economics. He has taught at Goldsmiths, University of London, as well as spending time at various investment banks and a well-known economics consultancy.

> **"PRIVATE INVESTORS ARE SHUNNING THE HIGHLY PAID, POORLY PERFORMING MANAGERS."**

Train to Bolton, Fisher to Price

Based on MoneyWeek's popular "Great Investors in History" column, the core text of the book contains 20 chapters which examine and discuss the careers of a score of professional investors. Many of those covered are now plying their trade in stock market heaven, with Partridge going as far back as the late 18th century to analyse exceptional wealth creators. But some of those included, such as Nick Train, Warren Buffett and Neil Woodford, are still successfully making money for investors in the present day.

For each "superinvestor", Partridge begins with a short introduction on the individual, followed by a discussion of their investing career, including what approach they had to making money for themselves or their clients and shareholders. As well as looking at the best trades of their career the author also examines some of the less successful decisions that each investor made, which is useful for reminding readers that even those at the top of the game can get it wrong sometimes – just like the rest of us.

Each chapter concludes with a four factor rating system (using a "hotel style" star rating out of 5) which aims to compare the investors against each other to determine who is the most important. Firstly, their overall *performance* is rated, with the focus being on how they fared against the wider market. Consistency is also important for this measure, with those who went bust at some point during their career being rated lower. Next, their *longevity* is analysed, with the best superinvestors having successfully plied their trade (and trades) over several decades. *Influence* is the next determining factor, looking at what contribution they made to the industry as a whole in terms of inspiring others to follow their styles or perhaps from their contribution to investment or economic theory. Finally, Partridge marks the superinvestors on *ease of replication*, or in other words how simple is it for other investors to copy and implement their investment style.

"SUPER INVESTORS IS A GREAT ADDITION TO THE INVESTMENT LIBRARY."

The 20 investors covered in the book represent a wide range of investment styles, from value investing, venture capital, growth investing and other more exotic strategies. Whatever their own unique take on things, they have all made their own significant contribution to investment history.

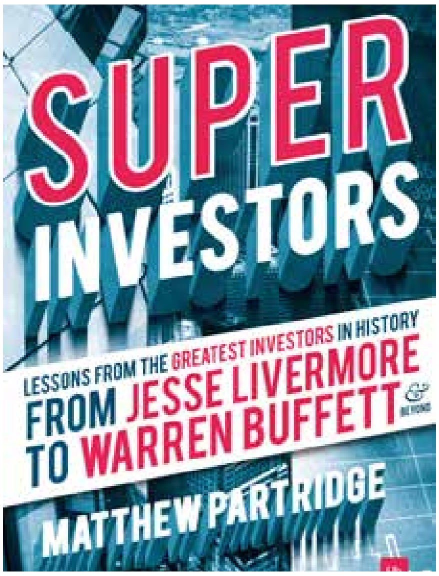
Take for example David Ricardo, the 18th/19th century financier and economist who made a fortune by trading government bonds during the battle of Waterloo. Trying to gain an informational advantage, Ricardo hired an assistant to observe the battle and send the news back to him. With the battle going well for the British, government bonds would be expected to rise in price. But suspecting that other traders would know he had the full story Ricardo employed a devious strategy by first selling bonds and, with others then following him, driving down the price. He soon reversed course and bought the bonds at knock down prices, eventually making enough money for him to retire from active trading. While the book is supposed to highlight ways that investors can copy winning trading strategies readers should note that Ricardo's actions are today considered to be highly illegal!

10 key lessons to take away

The book concludes with a summary of the ten key lessons learned from all of the superinvestors and how readers can use them to increase their own wealth. For example, unlike many academics, Partridge points out that many of the superinvestors have demonstrated that markets *can* consistently be beaten over an extended period of time. And there are many roads to achieving this, with some investors focussing on a value based approach, some buying shares in companies operating in fast growing sectors and others having a preference for businesses with strong brands. The author argues that the approach readers take should be based on a strategy that matches their own skills and resources.

Another lesson is that the best investors are flexible in their approach, often changing or adjusting their investment styles over the course of their careers. To take one example, the great John Maynard Keynes moved from asset allocation and leveraged currency trading to become a very successful value investor. And "father of value investing" Benjamin Graham sometimes stuck with his holdings long after they stopped being value stocks. However, Partridge warns that too much flexibility could be dangerous, especially if the investor doesn't have the skills required to take on a new approach – value investors moving to being day traders is a classic example.

Talking of Benjamin Graham, the author argues that, while all individuals



covered in the book are exceptional, Graham is the best investor of all time. While he doesn't get a perfect score (18 out of 20 stars) and ranks equally with index investing pioneer Jack Bogle, his ability to beat the market by a large amount and his influence on those who came after him make him worthy of the accolade.

A Super Read

Super Investors is a well written, entertaining and informative book that will appeal to the amateur and professional investor alike. Private investors will learn how to apply the various techniques covered in order to increase their wealth, while fund managers can gain useful insights on how those at the top of their profession became so successful – they might even want to apply the rating system to themselves to see how they compare against their rivals. All in all, *Super Investors* is a great addition to the investment library.

EXCLUSIVE BOOK OFFER

Get 20% off RRP ***Super Investors.***
Visit www.harriman-house.com and use the **promo code**:

MASTERBOOK17

Code can only be used on the Harriman House website. Minimum order of £5 required. P&P will be added at the checkout.

About Richard

Richard Gill is an investment analyst with over a decade's experience of analysing small/mid cap equities. Richard qualified with the Chartered Financial Analyst (CFA) designation in 2012 and was awarded PLUS Markets Financial Writer of the Year at the 2008 PLUS Awards. He has been a judge at the Small Cap Awards from 2013 to 2017.

BY TIM PRICE

THE FINAL WORD

BONDS: A WARNING FROM HISTORY

One of the most intriguing investment books I have ever read is *Forty centuries of wage and price controls: how not to fight inflation*. You can download a free PDF copy of this highly recommended book here.

Forty centuries is a history of market rigging. As its title suggests, governments try their hand at this ruse on a pretty regular basis – and it never ultimately works.

Perhaps the most instructive historical example is that of the Edict of Diocletian. Shortly after this Roman Emperor ascended to the throne in AD 284, commodity prices and wages took off. The reasons for this inflation are attributed to, variously, a vast increase in his armed forces to repel barbarian hordes; a huge government building programme; an expansion in taxes and government officialdom; and the use of forced labour in his public works. Diocletian himself, in time-honoured manner, blamed the "avarice" of merchants and speculators instead.

The authors of *Forty centuries*, Robert Schuettinger and Eamonn Butler, put the blame for the inflation on something a little more prosaic: a massive increase in the money supply due to the debasement of the coinage. During the fifty years prior to AD 268, for example, the silver content of the Roman denarius coin fell to one five-thousandth of its original level. The monetary system duly fell into chaos and trade collapsed.

Diocletian tried currency reform and when this failed, introduced his famous Edict on prices and wages. First he introduced a new copper coin which was almost worthless. Then he fixed the maximum prices of beef, grain, eggs and clothing, and ordered that anybody who sold his goods at higher prices would be executed.

Prices still rose.

The clue to the message of *Forty centuries* lies in its title. As David Meiselman asks in his foreword to the book,

> What, then, have price controls achieved in the recurrent struggle to restrain inflation and overcome shortages? The historical record is a grimly uniform sequence of repeated failure. Indeed, there is not a single episode where price controls have worked to stop inflation or cure shortages. Instead of curbing inflation, price controls add other complications to the inflation disease, such as black markets and shortages that reflect the waste and misallocation of resources caused by the price controls themselves. Instead of eliminating shortages, price controls cause or worsen shortages. By giving producers and consumers the wrong signals because "low" prices to producers limit supply and "low" prices to consumers stimulate demand, price controls widen the gap between supply and demand.

Despite the clear lessons of history, many governments and public officials still hold the erroneous belief that price controls can and do control inflation. They thereby pursue monetary and fiscal policies that cause inflation,

"THERE IS SOMETHING RATHER WONDERFUL ABOUT THE ABILITY OF FINANCIAL MARKETS ULTIMATELY TO WRESTLE THEMSELVES FREE OF THE CLUTCHES OF HUBRISTIC BUREAUCRATS."

> convinced that the inevitable cannot happen. When the inevitable does happen, public policy fails and hopes are dashed. Blunders mount, and faith in governments and government officials whose policies caused the mess declines. Political and economic freedoms are impaired and general civility suffers.

There is something rather wonderful about the ability of financial markets ultimately to wrestle themselves free of the clutches of hubristic bureaucrats. As Jeff Goldblum's Dr. Ian Malcolm observes in the film *Jurassic Park*, life finds a way.

I saw a pretty good example of this early on in my career. Back in September 1992, the Bank of England was desperately trying to keep the pound sterling in the European Exchange Rate Mechanism, despite the fact that the British government had put it in at the wrong rate. As part of its inflation strategy, the government had elected to shadow the Deutsche Mark. But (West) Germany was experiencing inflationary pressure due to its recent reunification with East Germany, and so its interest rates were higher than were appropriate for a British economy then in recession.

Something had to give. Ultimately, after the Bank hiked rates to an absurdly high level given the fragility of the economy, sterling was ethnically cleansed from the ERM – but only after the Bank of England had sustained losses of over £3 billion (how quaintly tiny those figures seem from the perspective of 2017). They were big figures then, though. One commentator at the time said it was as if the UK Treasury had spent the afternoon lobbing schools and hospitals into the North Sea.

“THIS IS HOW REVOLUTIONS HAPPEN.”

As Mrs Thatcher once suggested, you cannot buck the market.

But nobody told our central bankers. Messrs Yellen, Carney and Draghi did not receive that memo. It would appear that they never read their copy of *Forty centuries*. Since 2008, monetary policy rates and government bond yields have been suppressed and kept at artificially low levels in order to reflate the system. All that those trillions of dollars, pounds and euros worth of QE (assisted by its comparably evil twin, ZIRP) seem to have achieved is to accelerate the economies of the West more closely towards that of Japan during its own lost decade.

I keep a certain letter to the editor of the Financial Times near me at all times. It was written by a Mr Takashi Ito of Japan on 17 August 2010. It reads as follows:

> "Sir, 'Can the Fed prevent Japanese-style deflation, a period of falling prices associated with economic stagnation, from taking hold?' is a common refrain nowadays.
>
> The US Federal Reserve's obsession with Japan is pretty disastrous. First, Alan Greenspan opened the taps wide for too long, fearing Japanese-style deflation, which fuelled the housing bubble that led to the recent financial crisis. Now, fearing the lost decade plus, the Fed is probably going to keep easing until some different but unpleasant outcome is the result. Stagflation perhaps, or hyperinflation?
>
> This is so ironic, because for so long people have sneered at the Japanese for their inability to steer their economy to recovery. Perhaps because they have sneered so much, it is no longer possible to admit that after a huge housing bubble bursts, there is nothing to do except suffer many years of economic indignity.

> The fixation with Japan was not helpful during Mr Greenspan's watch, nor I fear will it be of much use this time. The Japanese may be different, but they were not stupid."

I love that phrase "many years of economic indignity". It is fantastically Japanese. Over here we would say something more crudely honest, like "a Depression".

So we have had a decade of monetary illusion and, for want of a better phrase, wage and price controls – and there is not, frankly, a whole lot to show for it other than artificially boosted stock markets, bond markets and property markets. In the process of manipulating stock, bond and property prices, our central banks have made those who own assets richer (at least in nominal terms) and have consequently made those who don't own assets poorer. They have also added to economic inequality by making property essentially unaffordable, perhaps forever, to those just starting out in their careers.

This is how revolutions happen. It is when high profile businessmen reportedly indulge in binge-drinking sessions that culminate in their vomiting into fireplaces. Meanwhile, as Graeme Archer [nicely puts it](),

> If you survive by surfing the gig economy, writing your blog and tweeting your podcast, in-between cycling up Barnet Hill to deliveroo a pizza to the smug marrieds-with-mortgages at the top of it; if the concept of owning a home feels as realistic as holidaying on Mars; if the "financial security" you seek involves paying off the student loan you took out to pay for a course that qualifies you for precisely nothing, let alone a job with enough salary to make good that debt: then of course you require small punctuations of pleasure. Like, ooh I don't know, spending the weekend at "boss" Glasto, shouting *f**k the Tories* along with your new best friend, the fat controller of Channel 4 News.
>
> I don't entirely mock; there's something in it. Life isn't easy for young people and they didn't invent the wretched university con-machine that's left them pointlessly indebted; they didn't prevent sufficient house-building in the South East of England and they most certainly didn't cause the financial crash which has left all of our wages so iridescently stagnant.

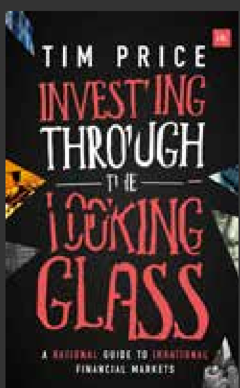
"NOW THINGS GET INTERESTING."

Now things get interesting. Having spent 10 years at the bottom of the hill, central bankers look like they'd like, finally, to start marching back up. The Fed has already taken baby steps to normalise US interest rates, but if they mishandle things they could end up crashing the bond market. The same holds for Mark Carney and Mario Draghi and for the comparably indebted UK and euro zone. The bond market is now massively bigger, by value, than it was in 2007. There's a relevantly poignant line in the film *A Night to Remember* as the Titanic starts to slip beneath the waves and it dawns on the ship's captain that there are 2,200 on board but only room in the lifeboats for 1,200 souls:

> I don't think the Board of Trade regulations ever visualized this situation. Do you?

About Tim

Tim Price is manager of the VT Price Value Portfolio ([www.pricevaluepartners.com]()) and author of 'Investing Through the Looking Glass: a rational guide to irrational financial markets'.



MARKETS IN FOCUS

JULY 2017

GLOBAL EQUITIES

Index	Last Month %	YTD %	Proximity to 52w High*
Hang Seng	6.1	24.0	
Bovespa	4.8	9.5	
NASDAQ 100	4.1	21.0	
Dow Jones	2.5	11.0	
S&P 500	1.9	10.0	
Euronext 100	1.0	6.6	
Russian Trading System	0.9	-12.0	
FTSE 100	0.8	3.2	
IBEX 35	0.6	12.0	
S&P/ASX 200	0.0	1.0	
CAC 40	-0.5	4.8	
Nikkei 225	-0.5	4.2	
DAX Xetra	-1.7	5.5	

COMMODITIES

Commodity	Last Month %	YTD %	Proximity to 52w High*
Iron Ore	15.0	-6.4	
Sugar (No. 11)	10.0	-23.0	
Coffee	10.0	2.8	
Crude oil (Light Sweet)	8.3	-6.9	
Cocoa	7.7	-4.8	
Copper	7.6	16.0	
Crude oil (Brent)	7.5	-7.5	
Soybean	5.7	0.2	
Palladium	5.0	30.0	
Gold	2.6	11.0	
Platinum	1.4	3.9	
Silver	1.0	5.2	
Natural Gas	-7.3	-25.0	

FOREX

Pair/Cross	Last Month %	YTD %	Proximity to 52w High*
EUR/CHF	4.3	6.8	
AUD/USD	4.1	11.0	
EUR/USD	3.4	12.0	
EUR/GBP	2.1	5.1	
EUR/JPY	1.5	6.0	
GBP/USD	1.3	6.9	
USD/CHF	0.9	-5.0	
USD/JPY	-1.8	-5.7	
GBP/AUD	-2.7	-3.7	
USD/CAD	-3.5	-6.9	

CENTRAL BANKS - RATES & MEETINGS

Central Bank	Key Rate	Next	After
BOE	0.25%	Aug 03	Sep 14
ECB	0.00%	Sep 07	Oct 26
FED	1.25%	Sep 20	Nov 01
BOJ	-0.10%	Sep 21	Oct 31
SNB	-0.75%	Dec 14	---
BOC	0.75%	Sep 06	Oct 25
RBA	1.50%	Sep 05	Oct 03
RBNZ	1.75%	Aug 10	Sep 28
BOS	-0.50%	Sep 06	Oct 25
BON	0.50%	Sep 21	Oct 26

FTSE 350 TOP

Sector	Last Month %	YTD %	Proximity to 52w High*
KAZ Minerals PLC	39.0	100.0	
Sports Direct Int. PLC	30.0	36.0	
Indivior PLC	23.0	30.0	
Anglo American PLC	22.0	8.0	
Thomas Cook Gr. PLC	22.0	26.0	

FTSE 350 BOTTOM

Sector	Last Month %	YTD %	Proximity to 52w High*
Carillion PLC	-70.0	-76.0	
Acacia Mining PLC	-42.0	-53.0	
Nostrum Oil & Gas PLC	-16.0	4.9	
Provident Financial PLC	-15.0	-28.0	
Petra Diamonds Ltd	-13.0	-39.0	

FTSE 350 SECTORS TOP

Sector	Last Month %	YTD %	Proximity to 52w High*
Industrial Metals	15.0	26.0	
Mining	13.0	12.0	
Beverages	7.3	17.0	
Fixed Line Telecom	5.9	-14.0	
Life Insurance	4.1	11.0	

FTSE 350 SECTORS BOTTOM

Sector	Last Month %	YTD %	Proximity to 52w High*
Tobacco	-10.0	-2.1	
Pharma & Biotech	-6.5	-2.2	
Electricity	-4.9	-12.0	
Oil Equip, Serv & Dist	-3.6	-29.0	
Industrial Transport.	-3.2	-2.1