Riding the rapids

2020 brings new risks – and new opportunities

Rathbones
Look forward

The value of investments and the income from them may go down as well as up and you may not get back your original investment.

Riding the rapids

Keeping a sense of perspective is one of the hardest things to do. It has always been so, but especially in the 21st century.

When I grew up (and for most of my life), news was a heartbeat. There was a rhythm to it: one newspaper in the morning, maybe another one in the afternoon if you were in a city, and then the 9 o'clock news at night. Today, news is like a river, constantly flowing with pop-ups on your computer screen and vibrations in your pocket. Everything is so immediate and urgent and trumped up and overwhelming.

Our world is complex, ever-changing and yet, if you sit back and take a breath, comfortingly familiar in its rhythms. People, across the world and through the ages, tend to have the same dreams and fears. We all want to be comfortable, entertained and to provide for those we love. People have forever had similar reactions to prosperity, adversity, injustice and inequality. We get giddy and over-exuberant when times are good, afraid and confused when times are bad. We are incensed by unfairness, and there's no injustice quite like feeling you're hard up while your neighbour gets to live the good life. Our response to inequality is primal: it turns out apes feel the same way. When scientists gave some orangutans cucumber for doing chores and others grapes, the slighted group started throwing their displeasure around the room.

Looked at this way, the West's political unrest and culture wars are the natural reaction to burgeoning inequality over the past 10 years. This isn't anything new and it certainly isn't the worst reaction we've ever seen. Of course, this has implications for how societies proceed from here and therefore for investments, but the argument that our world is going to hell in a handbasket is a little over-absorbed in the present.

As investors, we tend to be focused on absolute growth in our economies. The greater the overall market, the better it is for business. And businesses drive the gains in living standards that have propelled us from ham radios and outdoor toilets to mobile phones and those fantastic waterfall showerheads. But we mustn't forget that we are human! Despite stratospheric improvement to everyone's quality of life, jealousy and a sense of injustice will burn just as fiercely in those who are left behind relative to the winners. It is a great paradox that shared periods of widespread poverty and pain tend to be more cohesive for communities than unequally distributed booms. It's the difference between the unity of the Blitz and the divisions of the 1980s.

Paul Donovan, a UBS economist, made a fantastic point recently: economic forecasts are "neither accurate nor precise". As he puts it, economists use decimal points in their estimates to show they have a sense of humour. These are wise words and they remind me of a pivotal lesson: the future is always uncertain. Sometimes we take economic data and forecasts too literally. They are typically flawed and incomplete and sometimes misleading, but they are still valuable. It's not about getting it perfect, it's about the direction of travel. That sense of direction helps us determine how people's attitudes may change over time, because markets are just aggregations of those feelings of optimism, pessimism and everything between.

It has become fashionable to "wait till uncertainty has lifted" before making any decision. But you can't spend your days waiting to see how tomorrow pans out. Your life and your investments will go nowhere.

Well, here I was trying to talk about perspective and I ended up talking about chimps, showerheads and data. I guess what I'm trying to say is that life goes on, in its ordinary way, so you can't get too wrapped up in the here and now. Take a step back and see where we've come from, that way you may be able to spot where we're headed.

David Coombs
Manager of Rathbone Multi-Asset Portfolio Funds and Head of the IFA Investment Team

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1. Green is good

Consumers are fickle and brutal. Remember the woes of Gerald Ratner, the 1980s Icarus. He spent the go-go decade giving Britons what they wanted: bargain jewellery to spend 'Loadsamoney' on. But he got too comfortable, joking with a crowd of fellow businessmen about the "total crap" he could flog to the 'idiots'. The 'idiots' were his customers. And they weren't happy at all once they'd found out what he thought of them. He still hasn't lived it down today. Ratners was all the rage one day, and a ghost town the next.

Few companies make such an embarrassingly large and public misstep. But they make Ratner's mistake in more muted tones: they get complacent and they stop understanding their customers. We all know fashions come and go – I miss most of them in the clothing department – but I try to keep track of how people shop and live.

It can have massive implications for businesses. In a very simplistic sense, take Tesco. In the 1980s and 1990s, people wanted choice. They wanted their supermarkets to be exhibitions of taste and flavour, huge cathedrals of consumption to stock 15 different brands of everything from beans to bread. So Tesco littered the land with elephantine supermarkets that stocked more than anyone else. And it prospered. It made money from brands vying to be on the most prominent shelves and it made even more money by bewildering shoppers with constant 'deals' that hid consistently rising grocery bills.

Times were good – so good the company missed the speed with which people's habits were changing. Suddenly, shopping was a hassle. The only reward after braving several kilometres of badly laid out aisles was searching for the end of seemingly unending queues. People craved convenience. And the best way to offer it wasn't the old way. Sticking a smaller store at every street corner just increases costs, leaves shelves empty by 6.30pm and engenders a deep loathing of self-checkouts. Carpeting the country with your properties has turned out to be a terrible decision for supermarkets. Not least because there was a much better method for offering both choice and convenience staring supermarkets in the face: the internet.

In these early days of the internet, convenience has dominated the minds of shoppers. The ability to buy whatever you want and have it delivered to your door has been intoxicating. This convenience craze also left a mark on the types of businesses that became successful in the 2010s – disruption is just fancy talk for doing something better than the old way. Whether that's online groceries delivered to your door, a taxi you can hail with a tap of your phone, or media that plays to a schedule you set. But this is no longer exciting for people. This is *expected*. It's important to understand that. Businesses won't get any kudos for a slick app, but they will incur a storm of outrage if they screw up. And I'm not just talking about lost orders or bad customer service.

With convenience now a given, I believe customers will focus more than ever on choice. In today's world, *how* you do business is probably more important than it has ever been. The internet gave us price transparency, and that has well and truly evolved into total transparency. Everyone can rate a company in real time and find out exactly how clean, green or honest it is with a simple internet search. The power of public perception will increase rapidly over the coming years. People are becoming more aware of superfluous plastic packaging, of greed and of the environmental impact of the businesses they support.

Now, when people are making decisions about the things they buy and the services they enlist, many of them are starting to want to 'do the right thing'. They are voting with their wallets. This doesn't mean investors should just avoid energy companies that haven't got a renewables strategy or businesses that deal in tonnes of single-use plastic. They can grasp opportunities too, by searching for businesses that can offer solutions to consumers' new demands. And we find the best-managed companies tend to be ahead of the curve on these issues – perhaps because they aren't continually fighting fires today, so can keep their eyes on the horizon. There are companies that make biodegradable packaging from plants that you would swear was real plastic. Others are creating household products that don't poison the environment. One business we've met is investing millions to make rodent traps that are humane and even some that allow you to release the little guys into your nearest field. Of course, you could argue that's just common sense. Keeping the mice alive increases the repeat business...

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2. Europe cashing out

Negative rates are an abomination. There, I said it.

I understand that, 10 years ago, the world was staring into the abyss of another Great Depression. The global banking system was about as tangled and delicate as a spider's web. Something had to be done. But, as always seems to happen with emergency policies, they become incredibly hard to reverse.

At its heart, the crash of 2008/09 was caused by the same thing as the one that struck 80 years earlier. The financial industry had, through alchemy, turned straw into gold – and by doing so it introduced phenomenal leverage into the stock market and the financiers who bankrolled the gold rush. In the crash of 1929, American investment trusts borrowed against their shares to invest solely in other investment trusts that had in turn leveraged up and bought other investment trusts. Sounds a lot like banks giving out NINJA loans (no income, no job, no assets), packaging them up and selling 'diversified' bundles of them to investors and other banks, calling them "safe as government bonds". Just like in the 1930s, as the leverage unwound it created a vacuum that sucked money, jobs and businesses into oblivion.

In the 1930s, American leaders doubled down on the prevailing cures, sticking to the dollar's gold standard, cutting fiscal spending and hiking interest rates into the dip. It caused a calamity that scarred an entire generation. Thankfully, in our time, leaders chose to try new solutions which staunched the downturn and prevented a full-blown depression. But central banking magic sort of left governments off the hook. Many of them used the monetary policy gymnastics to avoid making the difficult decisions to fix underlying problems. You know how it is, "exceptional" policies become part of the furniture when you've lived with them for 10 years. And at that point, the Overton window – the bounds of acceptable mainstream policy – has shifted. Enter negative interest rates, or looked at another way, the punishment of prudence.

Our macroeconomic wonk Ed Smith went to a European Central Bank (ECB) policy convention in the autumn (obviously I would have been all over this, but I had to see a man about a dog). When Ed reported back it only increased my doubts about the path Europe is on and the long-term viability of its institutions. He told me that the ECB's top macroeconomic advisers were doing absolutely no research on how negative interest rate policy distorts markets and impacts banking profitability, consumer behaviour or inflation expectations over the long term. To me, that seems deeply irresponsible.

For those who have seen Netflix's Stranger Things, I see negative interest rates like the Upside Down: a parallel world where everything in it is the same, except it is decaying and there's a monster of deflation creeping around. Yes, negative rates are supposed to fight deflation, but I worry that in reality they could end up causing it. By cutting rates below zero, you are effectively telling your people that the world is upside down. In that environment, would you really feel like spending and investing? Or would you simply buy real assets and hunker down? Economic data out of Europe seems to corroborate my fears: inflation is falling and house prices are surging. Lately, the more negative bond yields get, the higher the gold price.

It's not just negative interest rates, either. What does it mean for a bond market when the money printer owns a quarter of the outstanding bonds? That's what Reuters reported back in June, before the ECB started buying yet more corporate bonds. If the ECB isn't careful, junk bonds will get so expensive that their yields to maturity will turn negative. Oh, wait, that's already happened.

In today's globalised world, the effects of the ECB's policies leak out beyond the borders of mainland Europe. They send its investors clamouring across the channel and into America, searching for better yields and pumping up our bond markets as well. As we look around debt markets today, we are having to roam farther afield to find reasonable fixed income investments and increasingly we hold cash and real assets like gold and other commodities instead.

As 2019 winds down, most government and investment grade bonds offer negative yields after you account for inflation and some are on track to lose you money even before that. My fellow fund manager Will McIntosh-Whyte came up with a great analogy for investing in bonds today: "You're not picking up pennies in front of a steam roller anymore – you're putting them down."

3. Aesop's unicorn

The secret of the pitch is in the presentation. For instance, in silhouette, a donkey with a traffic cone on its head looks exactly like a unicorn.

Silicon Valley veterans can tell you the secret to building a unicorn (a billion-dollar non-public company): keep the details vague, make your aspirations and total addressable market vast and label yourself a tech entrepreneur. If you do that, money will flow. At least, it worked a charm in the 2010s. 'Tech' companies (strictly speaking internet-based firms) have raised phenomenal amounts of money over the past 10 years. And most of them have burned through it at a breath-taking rate.

There are two schools of thought on the best environment for nurturing innovation. One is that necessity is the mother of invention: by restricting resources and creating stress you create a pressure cooker that brings forth solutions. The other is offering virtually unlimited resources: by sweeping away day-to-day impediments you allow for bold, blue-sky thinking. I'm old-fashioned, but I tend to believe the best environment is somewhere in the middle (and, perhaps, slightly skewed to the former – what can I say? I'm thrifty).

It seems to me that, in this late stage of the digital boom, too many investors had come down on spraying money at any idea that came along. Japanese telco conglomerate SoftBank and its $100 billion Vision investment fund was only the most prominent culprit. Did this avalanche of cash unleash creative enterprise and drive innovation? I'm not so sure it did. Or, at least, not on a dollar-weighted basis. It's fair to

say a hefty bubble inflated in private technology companies. But that bubble may already have started to deflate. A herd of unicorns were trotted out for initial public offerings in 2019; the horns promptly fell off most of them. It turned out that public investors didn't agree with the values slapped on businesses by private equity backers. Suddenly, everyone was racing back to the accountants for a revaluation. Interestingly, news has started to leak out of start-ups slashing their workforces and tightening up their budgets.

At the height of the summer, SoftBank founder and tech visionary Masayoshi Son was a messiah, with investors hanging on his every word. He was the primary backer of WeWork and its eccentric leader Adam Neumann. Only a few months later, with WeWork's IPO laughed off Wall Street, virtually no one turned up to listen to him speak at a conference in Saudi Arabia (its sovereign wealth fund holds almost half of the Vision fund). WeWork had said that it aimed to "elevate the word's consciousness". Perhaps it succeeded: people are much more conscious of the risks of putting all their faith and cash into opaque businesses with questionable governance.

Technology can be a dangerous field to invest in. It's the place where magic and science dance in circles and it's hard to tell which is which. It's a place where the inventors have, as we say in the business, asymmetric information. They know much more about their field and the realities of their technology than you do. This is fairly true of any business, yet the scales are firmly against you when you're at the bleeding edge of science: if it really is revolutionary, it's by definition untested.

There's a reason they call Silicon Valley the Enchanted Forest: it's enchanting for investors to get into The Future before the masses. But it's easy to get lost among the trees. Don't get us wrong – we invest in 'technology' companies too! They tend to be in our crosshairs quite a bit as they usually pack little debt, have minimal capital assets – like large factories, machinery and data centres – relative to their earnings, and can scale well (increase sales at a much faster clip than costs rise).

But for us, the cardinal rule is to remember that 'tech' companies are businesses too. By that, we mean there is no such thing as a 'tech' business. It's a lazy moniker. Every business embraces technology; some businesses just use newer and better technologies to disrupt other businesses that haven't reinvested well enough. Uber is a taxi firm. Netflix is a new-age broadcaster. Tesla is a car manufacturer. Amazon is a retailer and marketplace for products and media. Facebook is a global message board. Alphabet is a directory for the entire world and all of its knowledge. WeWork is a remuneration scheme for one man and his family.

Rather than focusing on whether something is a tech company or a real estate company or a retailer, you should focus on whether it's a good company. Disruption shouldn't spread from business to your consciousness.

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4. Centre folds

Radicalism used to be a young man's game. Nowadays, all the extreme politics seem to be coming from the old guard.

Donald Trump, 73, is running a pretty extreme White House: shaking up global trade, undermining the central bank and intelligence services, and generally stamping his unique style on the office. Close on the heels of his most likely Democratic rival Joe Biden are diehard socialist Bernie Sanders, 78, and Elizabeth Warren, 70, who plans on completely reinventing American capitalism.

At the time of writing, Senator Warren looks more likely to take on Mr Trump in the 2020 US presidential election than Senator Sanders, who seems too old and too radical for American voters. She is smart, determined and squeaky clean. Senator Warren's plans for America are pretty punchy. She would convert every $1 billion+ company (that would capture the entire S&P 500 Index) into a new statist corporation run for the benefit of all stakeholders; 10% of their shares would also be confiscated and held in trust for employees. She would break up the internet giants and regulate them as utilities, sort of like we do with water and power companies in the UK. She also supports Medicare for All, essentially a plan to implement an American National Health Service (NHS), and throwing yet more regulation on banks…

Obviously the profitability of some companies would be put to the scythe if these plans were realised. It would create a tremendous fight: businesses and investors would battle all the way to the Supreme Court on constitutional grounds. Even before that, the Democrats would have to win both chambers of Congress as well, which is a tall order. But expect to see industries in her crosshairs slump if the probability of her nomination increases.

She could win against Mr Trump too, if she wins the Democratic nomination — it will definitely be close. That's the rub, of course: she has to edge out Joe Biden, who is no spring chicken himself at 76. He's polling higher than the rest of the democratic pack, but his son has ties to a Ukrainian gas company that has become the battleground for impeaching Mr Trump. Congressional hearings on the subject could be as damaging to Senator Biden's nomination race as it would be to Mr Trump's chances of a second term.

Where did the centre go? Or is it still there? A silent majority unnoticed in the cacophony of social media-fuelled identity politics, to steal a phrase from Richard Nixon, another US President who faced the threat of impeachment. I guess we'll find out soon enough.

We're on high alert in this area. We will look to adjust our American stocks as the political landscape changes. This won't be a knee-jerk reaction or a lock, stock sort of move. There's some lazy analysis out there, just like there was before Mr Trump's election. It was widely accepted that a Trump presidency would throw the US into recession, send a net 4 million to the ranks of unemployed and tank the S&P 500 Index. Three years on and the US economy is nowhere near recession, there are 6.3 million more Americans at work and the S&P 500 Index is trading near new all-time highs and about 50% higher than mid-2016. Whoops.

Politicians rarely influence developed markets directly. And if they try, things tend to get bogged down in the courts or the legislature. Instead, politicians influence a nation's mood. More specifically, they create optimism, pessimism or indifference among households and businesses, which leads them to spend or save, invest or flee. It's these decisions that really impact markets.

That's what led the pointy heads to get the immediate effects of Brexit or Mr Trump's victory so wrong. Ivory tower analysts thought about how they would react and then applied that assumption to society at large, not addressing the inconsistency that if those events came to pass it would be because most people voted for them and would therefore be happy with the result.

If Senator Warren were to win the presidency you'd expect most households to have voted for her and be confident about the future. But unlike with President Trump, who started with a massive tax cut and backdoor deregulation, many businesses and investors would be pessimistic or downright scared of President Warren. That would have serious implications for investment decisions, which flow through to employment and undercut strong household spending. Expect the stock market to account for that, regardless of what laws she can actually make and how most people feel about them.

5. To be, or not to be

Prince Hamlet railing about life, misfortune and interminable injustices is possibly one of the most recognised – yet widely misunderstood – literary lines in English.

"To be, or not to be, that is the question." But Hamlet's soliloquy goes on. He is not pondering whether to head down to the shops, but whether to top himself to escape the interminable hassle and heartaches of life. Why suffer "the slings and arrows of outrageous fortune", the "pangs of dispriz'd love" and "the law's delay" when you could simply sleep forever and avoid them? Well, because deathly dreams may turn out to be terrible nightmares. And so, the unknown stays Hamlet's hand. Although, spoiler alert, Laertes does for Hamlet in the final act anyway.

And so here in the home of Shakespeare we're muttering to ourselves, "To be, or not to be…". All Britons well know the injustice of lawmakers' delays and the pain of unrequited love. Brexit has dragged on for almost four years and the pound has sunk about 10% since the referendum as investors spurn our market. As we enter 2020, many UK companies are screaming value. But that's the question: to buy, or not to buy. If we buy, we are at the mercy of fortune and capricious politicians. If we don't, we may have to endure a nightmare run where UK stocks and the pound soar while we miss out. Conundrum.

Thankfully, we have the choice to avoid this issue entirely. Unlike Hamlet, our choice isn't actually binary. We can choose to buy some British companies that we feel are undervalued and complement that with overseas investments as well. In general, though, we tend to err on the side of caution and avoid taking risks on an extremely uncertain UK future.

The way we see it, if Brexit is a success and the pound jumps, that's good for our investors: the money in their pocket will go much further, both in UK shops and abroad. As for their investments, the value of foreign holdings will fall in sterling terms, but those same holdings likely benefited from the precipitous post-referendum slump in the pound. Our sinking currency has pushed the FTSE 100 Index higher over the past few years, stuffed as it is with earnings in foreign currencies like the dollar and the euro. So if the pound rises in the next year or so and investors sell their overseas investments to fund their needs, they would get fewer pounds than if they sold today. But each of those pounds will be more valuable.

This is a difficult concept to understand. People judge their wealth in their own currency – unless, of course, they are in a failing country. The Venezuelan stock market soared almost 200,000% in 2018, yet Venezuelans were desperately trying to convert their Bolivars to US dollars. It's a similar story in Argentina and Egypt. Their currencies have collapsed, leading to eye-watering gains in stock markets that are actually tremendous losses. Currencies are just names and numbers, mixed with a bit of national pride. Money is what you can buy with it. Nothing else matters. Economists speak of 'real' and 'nominal' returns, which can sound a bit like gobbledegook. But the meaning is instinctive to all of us: Venezuelans, Argentinians and Egyptians understand the difference between real and nominal more keenly than anyone who has sat through an economics lesson.

Currencies – like Hamlet's lament – are widely misunderstood. What we are trying to do with your money is buy good investments that will hold their real value. We would rather buy quality overseas companies that prosper, albeit with a risk that they may fall in sterling terms, than buy cheap UK businesses that may deteriorate even as they rise in sterling terms. We have to determine which British companies are cheap because of Brexit and which are cheap because they are poor investments.

6. Perception ≠ Reality

All the talk of the death of oil and the ascendance of renewable energy makes it easy to forget a universal truth: virtually everything synthetic we touch has the taint of crude oil.

It's plastic or wrapped in it. Petroleum has been spun into fibres for our clothes or used to send them around the world by jet or ship. Even organic food has been delivered to your local market by truck or van. This is a problem! And not just for the environment. The whole global economy is greased by the black stuff – a commodity that is overwhelmingly exposed to some of the world's most precarious regions.

Some of the largest producers in South America are struggling with poverty, mismanagement, democratic deficits, or all of the above.

A peaceful Middle East is an oxymoron, yet things have been getting even worse there recently. Saudi Arabia under the de facto rule of Crown Prince Mohammed bin Salman is a complicated place. Widely considered the real power behind his father, King Salman, Mohammed has led economic reform on one hand and on the other tightened the screws on enemies at home and abroad. The Saudi sovereign wealth fund has poured cash into new technologies and prepared to part-privatise its largest oil company in an attempt to pivot away from complete dependency on petrodollars. There are plans for building a $500 billion smart city and technology hub in the middle of the desert. Some strict laws on women have been rolled back and corruption among the ruling caste has been targeted. At the same time, critical journalists have disappeared and war with Iran is all but raging through the proxy of Yemen.

We're always wary of disruption to the Middle Eastern oil industry – a major artery for global commerce – and the chance of trouble had risen rapidly in early 2019 while investors were engrossed in the back and forth over the Sino-American trade war and Brexit. Then Iranian/Yemeni missiles and drones took down half of Saudi Arabia's productive capacity, sending the oil price spiking toward $70. The Saudis managed to patch up their damaged refineries and get back to touching distance of full nationwide production in under three weeks. Maybe we should get the Saudis to tender for the M4 project – it would be done in four weeks, not four years...

But getting back to our point. Crude oil will be the lifeblood of our societies for much longer than we'd like. And many of the nations that supply it are unstable or threatened by enemies. This creates a huge tail risk, we believe, and one that requires attention. If you avoid oil and gas companies completely, you can unwittingly create biases and risks in your portfolio. Virtually every company you own (yes, even the green ones) will suffer from higher costs if the price of oil spikes. That's because, as we mentioned before, crude oil has seeped into everything we do. This is why we continue to hold the more forward-thinking oil majors. It's a hedge against oil shocks.

We agree that the world has to move toward carbon-neutral energy at double-speed, but the companies that will be leading the way on this will necessarily be the oil majors, in our opinion, because they are the ones with the global infrastructure, relationships and cash flow to make it happen. We all just have to be sure to keep the pressure on them to not dally as they transfuse renewables into their energy circulation.

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7. The next big thing

Everybody has an app for that. So. Many. Apps. I'm not sure about your phone, but mine has bundles of icons I had to download for some reason or another and never touched again.

I think this sort of sums up the past decade or so we've lived through.

When the iPhone was launched 12 years ago, it wasn't just a phone. It was a portal to your attention. Never before did companies have a way to get their products and services in front of people 24/7. Not only that, a phone in every pocket lets them collect bits of data and over time get a picture of individual consumers, their likes, dislikes, habits and wants, and use that information to pitch. And then there's the ability to use the unique phone signals to count foot traffic and adapt businesses accordingly. This was like television on steroids.

Looked at in this way, it makes sense that superheated growth was in businesses that could take advantage. Apple grew to be the largest company in the world not because of its phones alone, but because it owned the industry-leading marketplace for companies to interact with people through their phones: the App Store. Alphabet (the artist formerly known as Google) developed an open-source rival and became the gatekeeper for the internet at large. Facebook gave people a forum to cultivate a digital persona, which it then turned round and sold to advertisers. Netflix capitalised on everyone having a television in their pocket to increase its share of the household media diet. Amazon used cookies, engagement and big data to commoditise individualised convenience and grow large enough to eat the world. There have been scores of others: Uber for taxis, JustEat for food, Instagram for Millennials, Snapchat for Generation Z. The list goes on.

An interesting shared trait of many of the past decade's winners is that they are, at heart, distribution businesses. They have used the power of the internet and the increased reach of smartphones to carve out greater sales and earnings for themselves.

So what's next? What will be the next big leg of growth? I don't have the answers here. It will no doubt be another unexpected secondary consequence of some cool new gadget, technology or way of doing things. One way to make a (probably terrible) guess is by looking at the huge challenges facing societies. Two of the most pressing are the rapid ageing of populations and the climate emergency.

At current projections, there are simply not enough young people to support the ballooning number of geriatrics. The World Bank estimates that OECD countries, a club of mostly rich nations, have 26 pensioners for every 100 workers. In 1960, there were fewer than 14; in 1995, about 19. That's a lot more strain on workers, who have to support both themselves and their elders in taxes, healthcare and personal spending. And the increase in this old-age dependency ratio is accelerating.

People are living longer, having fewer children and require more intensive care in their later years. There's just not the money, taxes or labour needed to support the wave of older, sicker people projected to crest in the coming decades. That's where technology could help. Biotech researchers could discover treatments for dementia, diabetes and other currently incurable wasting diseases. Robotics firms may design nurse-bots. Artificial intelligence pioneers could crack self-driving cars, technology that could be adapted to aid pedestrian mobility as well. Medical equipment companies could roll out new in-home devices that reduce demand for trained staff. Even, heaven forbid, government health systems like the NHS may shake themselves up digitally and join the rest of the world in the 21st century. Retrograde healthcare providers could enlist the help of all sorts of businesses on the forefront of medical science in the coming years.

Meanwhile, the world continues to heat up. Changing microclimates threaten agriculture, rising seas creep toward coastal communities and extreme weather is becoming ordinary. Our carbon-intensive societies are digging up reservoirs of life that took millions of years to trap and break down into coal and oil, and burning them by the tens of billions of tonnes each year. By continuing to use them, we are consigning ourselves to a radically different planet by mid-century and a truly nightmarish environment if we persevere beyond 2050. Again, technology will have to be our saviour. And if it doesn't, well, investments will be the least of your grandchildren's worries.

Thankfully, people have begun to take notice and demand change from world leaders and businesses. Yes, this is a potentially existential crisis for our species, but we're a hardy and inventive bunch. Many of the technologies we will need are already on the table; some need refining, others funding. Development of electric propulsion, cell batteries, wind turbines and solar panels has been breath-taking. Once prohibitively expensive, clean tech now rivals the dirty power of the past in terms of cost per unit. Yet more work has gone into hydrogen energy, and then there are carbon capture techniques. There won't be a single solution for our climate crisis, but there never is. We will overcome this challenge bit by bit, with breakthroughs coming from all around the world. What gives us hope? In 1950, half the world was illiterate. Today, more than 85% of us can read and write. When we sent the first man to the moon in 1969, less than 10% of 18 to 22-year-olds around the world enrolled in tertiary education. Now, almost 40% of them aspire to more than high school.

As we face some of the biggest challenges in human history, so many more of us are able to think up solutions.

Get in touch

For more information, contact our intermediaries team on **020 7399 0000** or visit **rathbones.com**

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