



MARKET GPS

FIXED INCOME PERSPECTIVES

JUNE 2021

FEATURING THE LATEST QUARTERLY INSIGHTS FROM OUR INVESTMENT TEAMS:

- ▶ Opportunities and risks in a multi-speed recovery
- ▶ Dystopia 2.0? Assessing the post COVID landscape
- ▶ Forecasts can fall short; humility and diversity are key
- ▶ Credit market's brave new world

OUR FIXED INCOME CAPABILITIES

Janus Henderson Fixed Income provides active asset management solutions to help clients meet their investment objectives. Over the past four decades, our global investment teams have developed a wide range of product solutions to address clients' varied and evolving needs. From core and multi-sector investing to more focused mandates, we offer innovative and differentiated techniques expressly designed to support our clients as they navigate each unique economic cycle. The capabilities of these teams are available through individual strategies or combined in custom-blended solutions.

While shared knowledge across teams and regions encourages collaboration and the debate of investment ideas, each team retains a defined level of flexibility within a disciplined construct. Environmental, Social and Governance (ESG) considerations, for example, are a key element of our credit research process and integrated within each team's investment approach. Our portfolio construction processes are governed by a rigorous risk management framework with the intent of delivering stronger risk-adjusted returns. Further, we believe transparency is the foundation of true client partnerships; we seek to earn and maintain our clients' confidence by delivering robust and repeatable investment processes and by providing firsthand insights from our investment professionals.

The Janus Henderson Fixed Income platform comprises 102 investment professionals situated in the UK, US and Australia. The teams are responsible for US\$79.5 billion* in client assets.



*As of 31 March 2021.

OPPORTUNITIES AND RISKS IN A MULTI-SPEED RECOVERY



Daniel Siluk



Jason England

Global Bonds Portfolio Managers Dan Siluk and Jason England explain how an asynchronous global recovery should lead to dislocations and opportunities in fixed income markets.

Key takeaways

- » Global central banks will likely be hesitant to precede the Federal Reserve in tightening policy.
- » The early-year rates sell-off has increased the term premium in many markets and with it the opportunity to capture “roll down” gains.
- » Economic recovery will be asynchronous with different regions and sectors travelling at varying speeds.

Headlines have not been kind to bonds in 2021. With the worst of the economic calamity hopefully behind us and rock-bottom interest rates in many regions having only one way to go (higher), many believe it's an easy call to increase exposure to riskier assets. The year's steady din about the potential for accelerating inflation has only exacerbated matters. While some of these concerns merit consideration, we believe that diversified portfolios should maintain a sufficient bond allocation for two crucial reasons: its lack of correlation to equities and typically lower volatility, especially among higher-quality, shorter-dated issuance.

With several global stock benchmarks reaching record highs this spring and the spread between the yield on high-yield bonds and Treasuries roughly 40% below their 20-year average, one has to wonder how much of the global reopening is already priced in. While earnings improvements and, in some – but not all – cases, repaired balance sheets have lent support to the rally in riskier assets, so too has the reach for yield as central bank purchases compelled investors to venture further out along the risk spectrum. Should the economic recovery underwhelm, or central banks reduce implicit support for markets, investors may get a harsh reminder of the benefits inherent in assets capable of preserving capital and dampening volatility.

Creating the template

Rates are low and central bank balance sheets are bulging. We've been here before. This was the playbook adopted foremost by the Federal Reserve (Fed) during the depths of the Global Financial Crisis (GFC). The recession triggered by the COVID-19 pandemic has some advantages over the GFC era. Entering 2020, the world's economy was on relatively sound footing and the crisis itself was not the result of credit transgressions. Slowdowns caused by natural events tend to be shorter-lived than those with economic origins as past excesses don't have to be absorbed.

But while the world entered the crisis together, its emergence is shaping up to be asynchronous, with particular regions and business sectors finding themselves in different lanes. Some will gradually get up to speed, others may be stuck on the entrance ramp and a few could accelerate so quickly that they catch the attention of their governing central bank.

All eyes – still – on the Fed

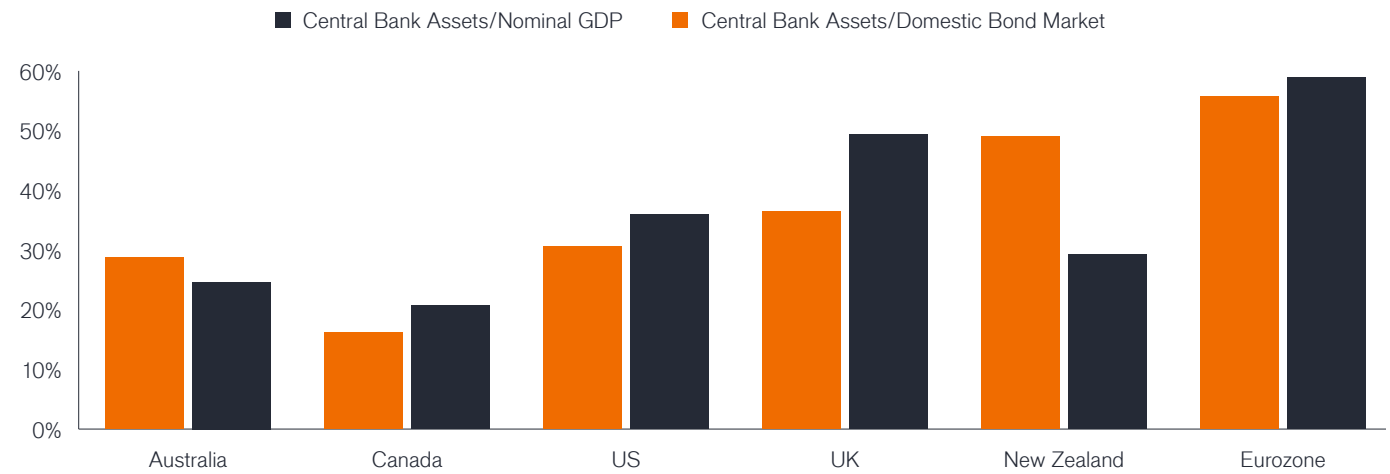
Having learned important lessons from the GFC, central banks acted quickly to stabilize financial markets as the pandemic spread. Their initial focus was maintaining market liquidity. The inability to accurately price securities of businesses with little earnings visibility and investors' unwillingness to buy anything but the "safest" assets threatened to aggravate the crisis. The fastest to act was the Fed. Including the initial ramp-up in the early days of the GFC, it took the Fed six years and three rounds of quantitative easing (QE) to increase its balance sheet from \$900 billion to roughly \$4.5 trillion. In 2020, total assets held by the U.S. central bank rose by \$3 trillion in just 14 weeks.

Unlike during the GFC, this time the Fed pledged to backstop corporate credits. While the facility was aimed at investment-grade issuers and "fallen angels," its commitment to act provided a lifeline to riskier credits as rapidly narrowing investment-grade spreads sent investors into higher-yielding securities. Maintaining liquidity, however, came at a cost and that cost was distortions in securities prices across the risk spectrum. As the global economy continues to stabilize and securities are once again expected to stand on the merits of their fundamentals, any curtailment of central bank support could result in the party ending for issuers of suspect quality.

This process was replicated across major economies. Although other central banks were not as quick off the mark, they eventually created facilities to restore liquidity and buy their economies time until large-scale vaccinations could be deployed. By certain measures, some countries have "out-doved," or been more accommodative than, the Fed. When compared to the size of their domestic bond market rather than their economy, at their maximum, the balance sheet expansions of several countries were on par with U.S., or in the case of Australia, exceeded it.

Figure 1: Central bank assets relative to domestic bond markets and GDP

A central bank's balance sheet relative to the domestic bond market rather than GDP is what moves the needle, and by this measure other countries were equally – or more – accommodative than the U.S.



Source: Bloomberg, as of 20 May 2021. Bond market size measured by the respective country sleeve of the Bloomberg Barclays Multiverse Index, which is a broad-based measure of the global fixed income market, representing investment-grade and high-yield bonds in all eligible currencies.

After you, please

It's the Fed, however, that's still calling the shots. Chairman Jerome Powell has been firm in the Fed's commitment to keep rates on hold until well into 2023 and in the bank's assent to allow inflation to run above target, as long as it averages 2% over the long-term.

This places other central banks in a conundrum. No country, especially export-dependent ones, wants to tighten policy ahead of the Fed. Doing so would invite growth-sapping currency appreciation. Unfortunately for several countries, that tipping point may be approaching. Australia, for example, has already added back all the jobs lost in the pandemic and its GDP is forecast to grow by 4.5% this year and a still robust 3.1% in 2022. In Canada, of the nearly 3 million jobs lost in the first two months of the pandemic, over 80% of them have returned. In the U.S., only 63% of the initial 22 million lost positions have come back. The upshot is the Bank of Canada has already been forced to taper its balance sheet while the Fed keeps expanding its by \$120 billion monthly.

The strength of the Fed's resolve may rest on one word: Transitory. Year-over-year headline consumer price inflation is expected to register higher than 3% in each of the next three quarters given low base effects, the release of pent-up demand for items like travel and lingering supply chain disruptions. The Fed believes this surge will be ephemeral, with price gains falling back to 2.1% in 2022.

Should they be right, they can be patient. If the bump in prices leads to persistent, rising inflation expectations – which they sometimes do – the Fed may find itself at risk of falling behind the curve and creating the conditions for yields on longer-dated Treasuries to sell off.

Rates grow more complex

While economic reopening should allow the fundamental merits of corporate and government issuers to again attract investors' attention, the future path of monetary policy is likely to remain a pivotal factor in financial markets. Although U.S. Treasury yields likely got ahead of economic reality earlier this year – a view validated by recent range-bound trading – the longer-term bias is toward higher rates. Key for investors is to identify regions capable of threading the needle between delivering welcome growth but not igniting a level of inflation that would either push yields uncomfortably higher or compel monetary authorities to deploy the blunt instrument of rate hikes sooner than expected.

When weighing these risks, we believe that the likelihood of elevated volatility in mid- to longer-dated government bonds has risen. Six months ago, emphasizing the front end of the yield curve would have condemned investors to meager returns. Given the year's steepening between ultra-short dates and bonds with three- to five-year tenors, that's no longer the case. Maturing securities once again

have the potential to generate returns by rolling down the curve given their yields tend to fall as their prices converge toward par value at maturity.

This, however, is premised on the front end of the curve staying anchored. For that to occur, central banks must maintain a hyper-dovish stance. Countries where tightening labor markets are at risk of wage-driven inflation may not have that luxury. The U.S., on the other hand – with its labor market slack and central bank latching its credibility to a “no-hike” forward guidance – has emerged as a viable destination to harvest front-end carry. This should remain the case as long as the Fed’s thesis of 2021 inflation proving transient stays intact.

This is not to dismiss other regions’ prospects. Several countries, including Canada, Australia, Singapore and South Korea, offer shorter-dated yields close to – or higher than – those found in the U.S. And with foreign central banks reticent to tighten before the Fed, they could maintain this posture as long as inflation expectations stay contained. Should spiking prices provoke a policy response, however, these sovereign curves could quickly experience a “bear flattener,” eliminating the opportunity for near-term carry.

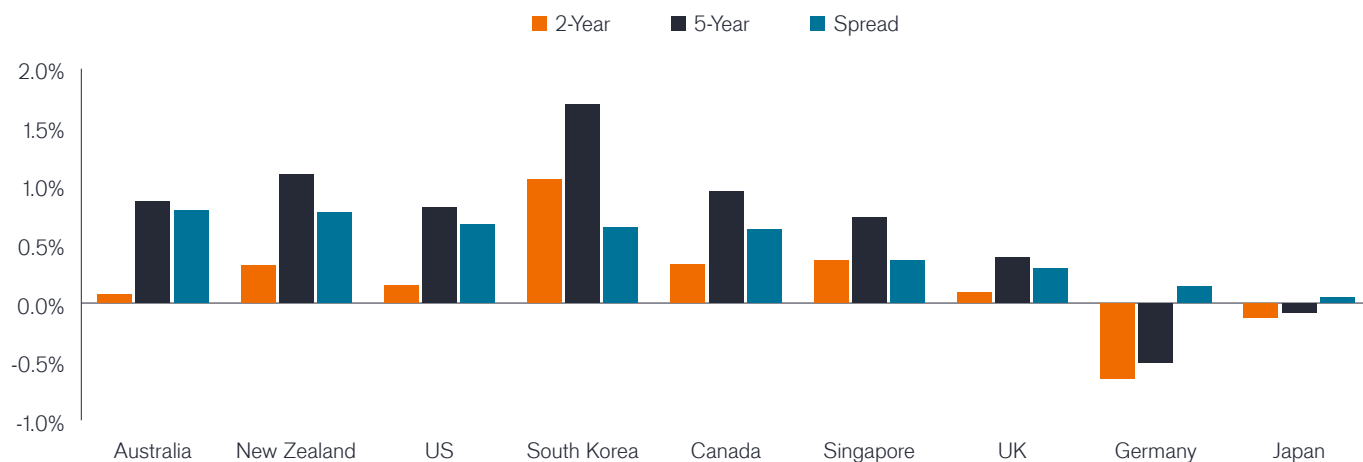
The right region, the right sector

The doubling-down on QE during the pandemic has only reinforced the view that central bank purchases are distorting sovereign debt markets. The presence of a more pronounced term premium in the investment-grade corporate credit curve bears this out and, in our view, better reflects the market’s expectation for economic growth. In our view, the combination of relatively higher yields and lower exposure to interest-rate volatility in a potentially inflationary environment makes the risk/reward profile of shorter-dated corporates among the most favorable in the fixed income space at present.

Furthermore, gradually diverging monetary policy and interest rate differentials should enable investors to identify attractive relative value trades as securities of similar credit quality – sometimes of the same issuer – trade at more favorable valuations in one market than another. These inconsistencies in pricing multiplied during the crisis as other jurisdictions did not match the Fed’s level of support for credit markets. With rates still low, expanding one’s investable universe to capitalize on these distortions increases the chances of generating excess returns without incurring commensurately higher credit risk.

Figure 2: Two- and five-year bond yields and associated spreads

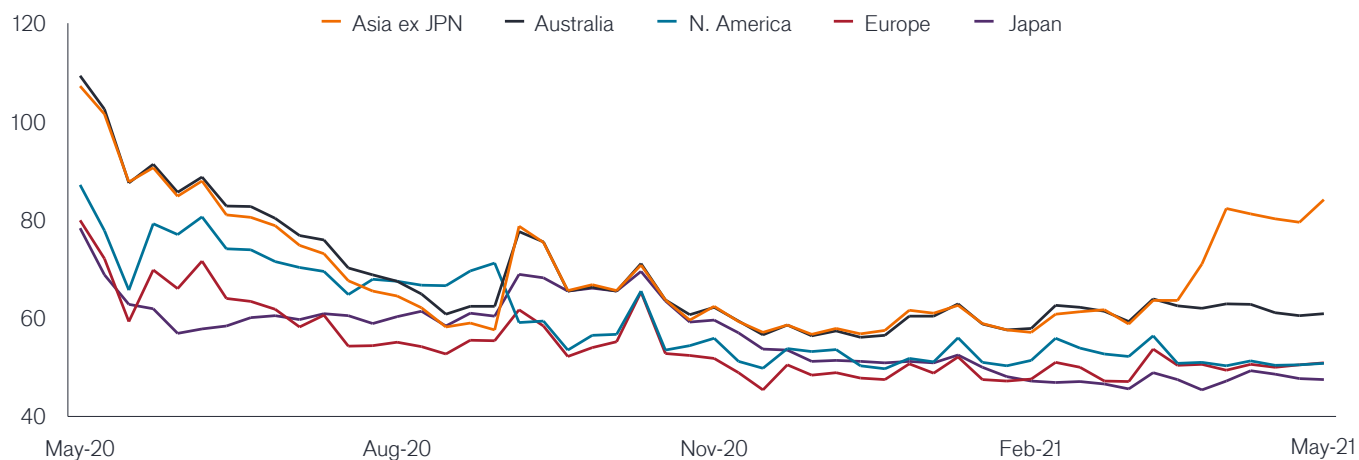
Regions with bond spreads similar to the U.S. may be hesitant to raise rates before the Fed



Source: Bloomberg, as of 20 May 2021.

Figure 3: Credit valuation as measured by spreads on credit default swaps

Valuations of credits in certain regions appear more attractive than those of similar quality in North America



Source: Bloomberg, as of 20 May 2021. Markit 5-year CDX Indices for the stated regions, composed of equally weighted credit default swaps on investment-grade entities.

Similar to what's occurring geographically, the pace at which different economic sectors emerge from the pandemic will impact their investment potential. For much of the past year we emphasized the risks facing industries broadly associated with travel. While many of our concerns still exist, the prospects for some sectors have improved. We do not believe that all of this optimism has been priced into the market.

These dislocations can be caused by either blanket categorizations of which "COVID bucket" companies fit into or an underappreciation of their financial position. Conversely, many undeserving issuers have benefited from market narratives when in reality they've survived the past year on the largesse of yield-hungry buyers riding the wave of narrowing credit spreads. We believe that identifying the worthy – but unloved – issuers and avoiding the free riders will be an important source of excess returns for credit investors as the global economy normalizes.

Stay nimble

For much of the post-GFC era, we've stated that bond portfolios must work harder to achieve a fixed income allocation's historical objectives of capital preservation and generating attractive risk-adjusted income streams. We believe this still is the case. Yet in the nascent post-pandemic era, with both regions and sectors on disparate trajectories of recovery, the breadth of the levers one can pull has increased.

While pockets of growth across the economy present opportunity, the specter of inflation and monetary policy error – by tightening too quickly or not quickly enough – cannot be ignored. The most pressing goal for a bond investor over the next several quarters is to identify the mix of regions, sectors and securities that can generate returns less correlated to riskier assets and offer levels of volatility lower than those found in equities and even longer-duration bonds.

Sources: All data presented is sourced from Bloomberg, unless otherwise noted; as at 21 May 2021.

Glossary

Basis point: One basis point (bp) equals 1/100 of a percentage point. 1 bp = 0.01%, 100 bps = 1%.

Bear flattener: The event of shorter-dated bonds selling off, which places upward pressure on interest rates on the front end of a yield curve, thus flattening the curve as longer-dated maturities prove more resilient.

Carry: The income generated by a fixed income security as its price rises toward par value upon nearing maturity. (Bonds are usually redeemed at par value when they mature. For example, if they are issued at \$100, they should pay back \$100 par when redeemed at maturity. Also commonly called 'maturity value'.)

Credit default swap: A derivative structured to offer protection against a category of securities. The pricing attached to these derivatives can serve as a proxy of the valuation of the underlying securities, with higher values trading at deeper discounts.

Fallen angel: a bond that once had an investment-grade rating but has been downgraded to high-yield status, often as a result of weakening financial conditions of the issuing company.

Monetary policy: The policies of a central bank, aimed at influencing the level of inflation and growth in an economy. It includes controlling interest rates and the supply of money. Monetary stimulus refers to a central bank increasing the supply of money and lowering borrowing costs. Monetary tightening refers to central bank activity aimed at curbing inflation and slowing down growth in the economy by raising interest rates and reducing the supply of money.

Quantitative easing: The creation of new reserves by a central bank that, in effect, expands a jurisdiction's money supply.

Roll down: The fact that, as a security's time to maturity shortens with the passage of time, the bond's yield tends to fall (and thus the price rises) in order to match the lower yields of the shorter bonds on the (now steep) yield curve.

Spread/Credit spread: the difference in yield between securities with similar maturity but different credit quality. Widening spreads generally indicate deteriorating creditworthiness of corporate borrowers, and narrowing indicate improving.

Term premium: the amount by which the yield on a long-term bond is greater than the yield on shorter-term bonds. This premium reflects the amount investors expect to be compensated for lending for longer periods.

Volatility: The rate and extent at which the price of a portfolio, security or index, moves up and down. If the price swings up and down with large movements, it has high volatility. If the price moves more slowly and to a lesser extent, it has lower volatility. It is used as a measure of the riskiness of an investment.

DYSTOPIA 2.0? ASSESSING THE POST-COVID LANDSCAPE



John Pattullo

Although COVID-19 has changed the way we live and work, it has largely been a booster rocket for changes that were happening all along. John Pattullo, Co-Head of Strategic Fixed Income, explains.

Key takeaways

- » The COVID-19 crisis has propelled the pace of structural change and the world will likely be more deflationary in the future with lower, not higher, bond yields.
- » Cyclical change separates companies into growth and value but structural change separates companies into winners and losers – losers don't 'mean revert', they go bust.
- » The current obsession with some expected, transitory inflation is, in our view, a modest headwind for the bond market, compared to the growing disruptive secular forces, which we are experiencing more than ever.

Always look at where the puck is going, not where it is

Back in 2013, we started talking about the Japanification (referring to Japan's experience of persistently low growth, low inflation and low interest rates) of Europe. Many people thought we were mad, but this has come to pass. We have long been sympathetic to Larry Summers' secular stagnation view of the world (pre-COVID), for the now well-versed reasons such as excessive debt, demographics, technology and lack of productivity. The COVID crisis has obviously accelerated many of the structural issues facing the world. Behaviours have changed; many permanently, some temporarily. One example of a significant structural change is the environmental, social and governance (ESG) trend, which was building critical mass pre-COVID and has now gone exponential.

As bond managers, we must assess the implication of all changes impacting both our portfolios, and indeed our lives. We feel that going forward the world will be more deflationary with lower, not higher, bond yields. Some of this change is permanent; we are not going to revert to the old way of doing things. The disruptions will likely only exaggerate winners and losers, erode margins and concentrate the limited growth we have in fewer more dominant American companies.

We always try to look where the puck is going, not where it is. The current obsession with some expected – and inevitable – transitory bottleneck inflation is, in our view, a small headwind for the bond market; it looks modest and is more than priced in, compared to the growing disruptive secular forces that we are experiencing now, more than ever.

In the sections that follow, I will discuss how we see the world changing. Warning: this is not very cheery.

New consumption patterns impacting revenues

I went into the office at the end of April — the first time for 14 months. I actually started working from home (WFH) a week before my team, as in late February 2020 I had been on a business trip in Uruguay. I did chuckle the other day when we all received a 'test', disaster recovery e-mail, which required acknowledgment. Haven't we just had a real world stress test of how useless a formal disaster recovery site can be? But, in fact, virtual working can thrive.

We are all creatures of habit, which includes the daily flat white (and often £10 lunch) from the coffee shop below our building. It is widely accepted that most of us will be working just two or three days a week in the office – which means that coffee shop's revenue is then presumably down 40% and won't be viable. Who's going to pay the rent for that unit? Sure, the landlord can throw the tenant out and leave the space void, or more likely retain the tenant and find a new and true equilibrium rent; perhaps, based on turnover. This will all be coming to a significant crunch in the next couple of months as the rent moratorium ceases (currently 30 June in the UK). So, landlord cash flows will likely fall significantly (many pension funds are, of course, the landlords). Overall, there are major implications for cash flows and businesses serving the central business district in any city, let alone pensioner incomes.

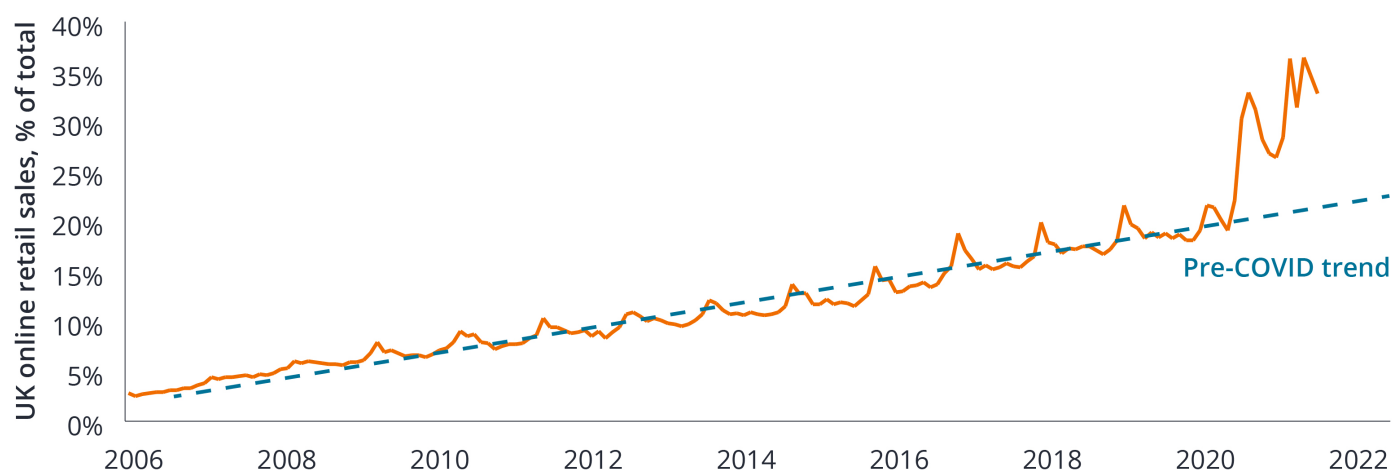
The not so rosy outlook for physical retail

A recent British Retail Consortium survey reported that 14% of high street shops (physical stores) in the UK remain empty and the proportion of empty units in shopping centres has risen to 18.4%, though shop vacancy rate at retail parks is only 10.6%. These trends were not great pre-COVID but have become much worse as consumption patterns have changed.

I've always considered most retail as non-essential, but on the rare occasion that I have ventured into a shop, I was usually told that they don't have my size in stock and I should look online. The UK does lead the world in a few things, one of them is internet shopping. Figure 1 shows the stunning acceleration in online purchases due to COVID. As Deutsche Bank puts it, "a decade of Amazonization in just a few months".¹ The rest of the world can only catch up here. Funnily enough, I have never been back to those shops that pointed me online.

The list of behavioural changes impacting consumption patterns is endless and we have to think how we are all contributing to the change. I'm not a great fan of facial hair, but I am shaving half as often as pre COVID; guess I need a lot fewer razor blades. I don't fancy manufacturing suits or formal shirts (my need for them have diminished) or even running a dry cleaning business in the UK (the latter was hit especially hard when smoking was banned in the UK, for obvious reasons). By the way, I have a patio heater for sale if anybody is interested. It did a great job and kept us warm for our outside team lunch in December.

Figure 1: “A decade of Amazonization in just a few months”



Source: Deutsche Bank Research, FX Blog, 'Labor supply is going up, up, up'; 5 May 2021.

The future of offices and travelling to get there

Do I need a season ticket for the train (Transport for London is already £2 billion behind budget)? Jenna (Barnard) and I used to travel quarterly to Jersey for a board meeting. We tried video conferencing years ago but it was awful and the connection broke down. The ubiquitous Zoom is exceptionally good and will likely replace many trips to Jersey and other places.

COVID has proved how easy it is to work from home. Barbados are offering one-year work permits for anybody to WFH. Given the appalling London spring weather I think we should have tried it. This digitalisation of the workforce may lead to an expansion of the workforce and presumably will lower costs per Deutsche Bank's 'Labor supply is going up, up, up'. As they point out, Australia has seen a surge in labour force participation, led by women, where the benefits of flexible working may be greater. Perhaps all our jobs will be offshored – not just call centres to India – enabling higher workforce participation, which only suppresses wage growth.

Let's consider the demand for office space; HSBC has said it has 20% less demand for office space this year and 40% less longer term.² Central London already had a lot of redundant property pre-COVID. The optimists seem to think WeWork will take occupancy and the rest will turn residential. I think not. More likely to stay vacant.

HSBC also expects to halve its business travel budget².

This is brutal, as the true profit contribution for most airlines is courtesy of business class travel. Emirates had most of its A380 double-deckers lying idle pre-COVID ... and we are really worrying about inflationary airfares affecting the consumer price index?

Changing patterns in leisure

Cinemas are a classic and fairly obvious structural change story. They are high fixed-cost businesses that are very dependent on the slate of blockbuster films and a delayed 'window' between cinema release and streaming/DVD release. The latter window has been shrinking for years and all but vanished during the pandemic.

So, again the direction of travel is not surprising, but the pace accelerated due to COVID. Disney+ has gone to immediate streaming release, which has massive implications for AMC cinemas among others (AMC cinemas, of course, along with Carnival Cruises, became the poster children for 'rescue bridge finance' in the eye of the crisis). Amazon has just released results highlighting a 50 million increase in Prime video subscribers and a 70% uptick in streaming demand over the last year.

Gyms' and personal trainers' margins have obviously been eroded. Many online classes are free or very cheap. Incidentally, the cost of dumbbells has gone through the roof as people started exercising at home. Four people in

our team of six have bought Peloton exercise bikes in the last year – there goes the gym membership forever!

In addition, within the team, we have all bought extra screens, headsets and webcams, but do we need any more? China's exports to the US are up 30% compared to two years ago. We doubt this is sustainable as home goods expenditure has been significant, much of it one-off, and now turning to services. Having said that, people won't have double haircuts to compensate for not having any during lockdowns, so some of this expenditure has been lost forever. The recent supply chain bottlenecks are not a great surprise but should not be confused with a structural change in inflation.

Finally, I read in an article that over three million UK households have bought pets during the pandemic.³ (The term 'humanisation' is new to me; my friends tell me their dog can speak, but I am not so sure.) The same article stated that half of the UK new pet owners are aged under 34. The Office for National Statistics has even added dog treats to the inflation basket in the UK – ruff ruff! Certain pet-related businesses and investment vehicles have benefited amid this trend. A pet care ETF, for example, outperformed the Nasdaq for the 12 months ending in May.⁴ (A dog is not just for COVID days, by the way.)

Family values and yet more societal change

I sometimes feel that the world is simply spinning too fast. The pace of change is frightening. The average life of companies in the S&P 500 Index has shortened dramatically. I think that perhaps we have all taken a breather to consider that we are not just hamsters on a wheel; family life and friendship are vitally important.

In that vein, Bloomberg ran a piece on how affluent Americans have rushed to retire recently⁵, and we know millennials (or Generation Y) have very different values compared to Generation X (one of whom turned 51 on 9 May). Financial advisors also say they are seeing a 'life is short' attitude among wealthy clients.

But disparity is growing. French economist Thomas Piketty talks about intergenerational inequality, which he defines as the fact that some lucky people will (only) acquire wealth in the 'inheritance society' we live in, while others can only dream about being able to pay off their student loans, let alone being able to purchase a first house.

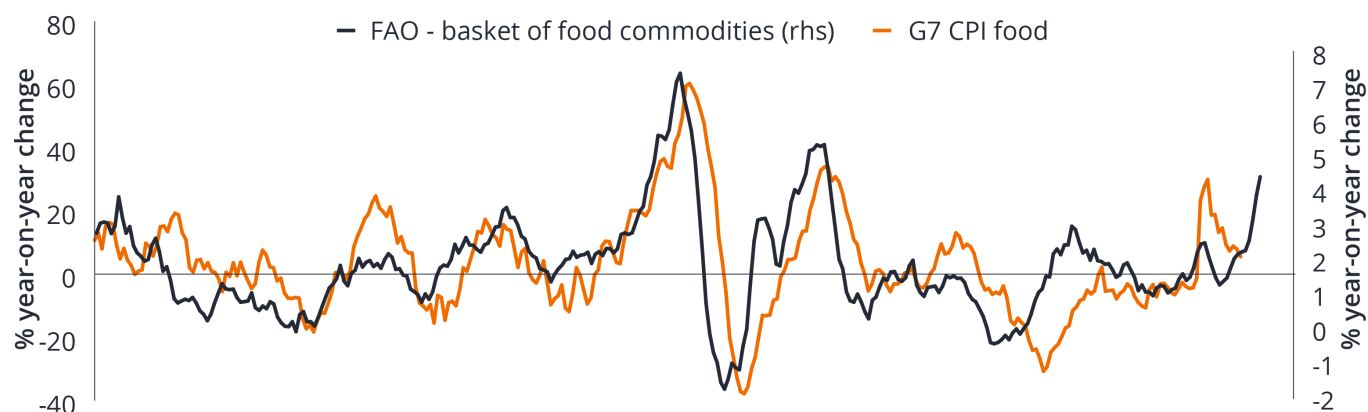
We also know COVID has fallen very heavily on the poor and the black, Asian and minority ethnic (BAME) communities. The current 'commodity inflation' will make weekly food shopping even more expensive. Figure 2 shows how the price of a basket of food commodities is on the rise. President Biden is trying to make society more equitable but COVID has highlighted the vast inequality more than ever – the K-shaped recovery.

The 'precariat' zero-hours workers are also more vulnerable. I would recommend Ken Loach's new film "Sorry I missed you" (on Amazon Prime, ironically enough), about the dire plight of a zero hours delivery driver – grim ...

It is the extra adoption of technology which is accelerating the pace of change. Artificial intelligence (AI), smart beta, exchange-traded funds (ETFs), 3D printers, robotics, algorithms, let alone blockchain and digital money, I would suggest are predominately deflationary and will disrupt society and equality even more.

Some industries are ripe for disruption, such as finance. Healthcare is also making significant progress here. I am a member of Babylon, the UK National Health Service

Figure 2: Weekly food shopping likely to get more expensive



Source: Refinitiv Datastream, Simon Ward, Economic Advisor, percentage year-on-year (yoy) changes, as at April 2021. G7 food consumer prices (CPI) versus Food and Agriculture Organization (FAO) Food Price Index (FFOI). The FAO Food Price Index is a measure of the monthly change in international prices of a basket of food commodities.

(NHS) online video doctor – how efficient is that? Signing up is free and tests have shown that their expert systems are more accurate at diagnosing many symptoms than the average doctor.

Be warned and let's not get distracted by a welcome reflationary impulse.

Population impact

You may have expected a mini baby boom due to COVID but in fact we have had the opposite, the so called 'baby bust'. During COVID, people have understandably become more cautious about the future; those lucky enough to have retained a job have saved a lot of their income, albeit partially by choice and partially due to the inability to spend. The French have been one of Europe's best procreators historically; however, data for January 2021 shows a fall in births of 13% in the country over the prior period. Last year, the US birth rate fell 4%, the largest single-year drop in nearly 50 years taking the fertility rate to 1.6 (births per woman), the lowest on record.⁶

Turning Japanese was considered a criticism by many, but people forget that Japanese gross domestic product (GDP) per head – in our view, a more valuable measure of success than total GDP growth – has been pretty respectable in the last couple of decades. The country's population is currently shrinking at half a million people a year, on a base of 126 million, and the fertility rate is 1.4.

Migration has also been significantly curtailed due to COVID. Australia had been the poster child for immigration – they were attracting approximately 300,000 young, educated, family forming, productive and consuming people a year to help the country grow. More recently these levels have fallen by an estimated

70-80%.⁷ New Zealand and Canada among others have all experienced great falls in migrants. This will have noticeable effects on longer term growth potential.

In addition, it is fair to assume mobility levels may well be impaired as some countries, including Australia and New Zealand, have closed themselves off. The UK lost up to 1.5 million workers in the last couple of years, largely due to Brexit, but more recently also due to COVID. Are these workers coming back? Some people estimate approximately half of these people will return. Let's hope so.

Concluding thoughts: stick to structural winners

Cyclical change separates companies into growth and value but structural change separates companies into winners and losers. Losers don't 'mean revert', they go bust. I'm sorry if this is all a bit depressing; it's just the way we see an increasingly dystopian world. One of our big London clients calls me 'miserable John' – fair dues, I guess.

Don't get sidetracked by the cyclical and inevitable reflation trade; try to think one step ahead and anticipate the larger and more persistent structural trends pervading all our lives. COVID has simply accelerated the structural forces we are all grappling with as well as the pace of digital, structural change for our bond investments.

We will not get sucked into illusionary cyclical, value traps; nor into illiquids, exotics or esoterics. 'Keep it simple, stupid', and buy the bonds of structural winners. If you look after the downside, the upside should look after itself.

¹ Deutsche Bank Research, FX Blog, 'Labor supply is going up, up, up'; 5 May 2021.

² Bloomberg, 'HSBC to Cut Office Space 20%, Reduce Business Travel by Half', 27 April 2021.

³ Financial Times, 'Pet mania' brings out animal instincts in eager investors, 27 April 2021.

⁴ Bloomberg, as at 28 May 2021.

⁵ Bloomberg, Affluent Americans rush to retire in new 'life-is-short' mindset, 30 April 2021.

⁶ The Guardian, US birth rate sees biggest fall for nearly 50 years, 5 May 2021.

⁷ Financial Times, Sharp fall in global migration threatens economic recovery, 9 February 2021.

Glossary

K-shaped recovery: an unusual scenario after a recession in the economy where certain industries and individuals pull out of a recession, while others stagnate. K-shaped recovery is how the recovery period may look if plotted onto a graph that tracks the overall state of the economy.

Precariat: a class of workers defined in many ways, such as by the instability and insecurity of their jobs, and the lack of benefits such as work pensions and paid holidays.

FORECASTS CAN FALL SHORT; HUMILITY AND DIVERSITY ARE KEY



Mike Keough



Greg Wilensky

Head of U.S. Fixed Income Greg Wilensky and Portfolio Manager Michael Keough discuss the challenges in forecasting interest rates as well as the tools they use to manage risk and generate returns.

Key takeaways

- » Forecasting the direction, magnitude and volatility of interest rate changes is difficult.
- » Maintaining humility in those forecasts, coupled with a diversity of risks, can potentially improve returns.
- » We believe thinking in terms of “excess” returns and “empirical” durations can also help.

“Computers in the future may weigh no more than 1.5 tons.”

POPULAR MECHANICS MAGAZINE, 1949

Popular Mechanics was absolutely right. They correctly – perhaps brilliantly, considering the silicon chip wasn’t invented for another decade – predicted that the size and weight of computers would fall in the future. But the extent to which they were wrong about the magnitude of that change is breathtaking. No matter how right you may be on the “what,” there is so much room to be wrong on the “how.” To put it in terms that many investors are thinking about today, no matter how confident you may be that interest rates will rise as the U.S. economy recovers, there is still much you can be wrong about.

Had an investor correctly predicted a global pandemic would erupt in the first quarter of 2020, we can imagine they would have sold stocks and bought government bonds before it started. But one could argue that without a detailed map of the markets’ exact paths, the knowledge that a pandemic was coming would have been less valuable than you might think. When would the investor have decided to reverse their more cautious position? What is the probability they covered their position a little or a lot, too early or too late and thus lost as much money in late March as they made in early March?

Correctly predicting the general direction of financial markets far into the future is certainly helpful but gauging the timing and magnitude of the moves is just as important and often more difficult. We suspect few, if any, bond managers predicted the shock of COVID-19 even in January 2020, but many experienced portfolio managers were able to not only navigate the volatility, but also find opportunities to add value for their clients, whether through lower volatility relative to their benchmark, higher returns, or both. Indeed, the task of portfolio management is, in our view, to build portfolios that are designed to perform well given both our predictions and the potential uncertainty that surrounds them and the world we live in.

We anticipate rates will continue to rise

In general terms, we believe the U.S. economy will continue to recover and the labor market will strengthen enough to push both inflation and interest rates higher. But predicting the magnitude and timing of these moves is very difficult. And, even if our prediction for the eventual peak of interest rates is highly accurate, we think portfolios need to manage the downside risk of less bullish outcomes as we navigate the economic reopening and concurrent responses from central banks.

The first quarter of this year saw a decidedly disorderly rise in government bond yields, but – in hindsight – it is not surprising. After nearly a year of fear and concern about the breadth and depth of the pandemic, the market abruptly repriced. We expect even the investors who called for rates to rise probably got the magnitude and/or the velocity of that move wrong. But, as we look to the future, we do not anticipate the degree of volatility we saw in the first quarter will persist.

The value of humility

As good as any portfolio manager might be, surprises will happen. That is not to say that some managers aren’t better than others at predicting the direction of certain sectors, industries, or even companies. But humility is important. As University of Pennsylvania professor Philip Tetlock described in his 2006 book *Expert Political Judgement*, “experts” are often actually worse at predicting outcomes within their specialty than ordinary people. At the risk of oversimplifying his book-length argument, the core of the problem is overconfidence.

The fact that a major shock like COVID-19 recently happened to the market may make it seem less likely that something of that magnitude will happen again soon. But the probability of a shock in any given year is largely independent of whether a shock has recently occurred. The probability that markets will experience a shock is best assumed to be a constant, if small, possibility. Given that these low-probability events (sometimes called “black swans” given their rarity) can have an outsized impact on returns, a humble investor who recognizes the challenge of forecasting the next black swan should, in our view, prudently build portfolios that help keep the downside risk from one of these events within acceptable limits.

“The probability of a shock in any given year is largely independent of whether a shock has recently occurred ... and best assumed to be a constant, if small, possibility.”

The value of diversity

To paraphrase the old saying, we don't believe you should put all your eggs into one forecast. A portfolio should be filled not just with a diversity of sectors and securities, but a diversity of risks. The math backs this up. Even if the probability of being right in any one forecast is high, the probability of a portfolio performing well over time will be higher if there are more forecasts that are as independent of each other as possible. To give you a sense of the math, if you allocated your portfolio's risk across 10 different market forecasts that were reasonably uncorrelated to each other, each having a good chance of being right, your portfolio would likely result in a better risk-adjusted return than if you had all your risk allocated to one forecast that had a higher chance of being right.

Even if you are ultimately right about your forecast though, maintaining the position can be tough if the market doesn't agree with you. The celebrated economist John Maynard Keynes summed this point up well in his quip that “the market can remain irrational longer than you can remain solvent.” And, one could be right about U.S. economic growth recovering strongly, but wrong about its impact on U.S. interest rates. For example, the extent the U.S. outperforms the global economy, global weakness could both temper inflationary pressures and increase demand for U.S. fixed income instruments from foreign buyers, keeping rates suppressed.

Managing interest rate risk is one valuable, and important, tool in portfolio positioning, but we recommend incorporating humility when budgeting the amount of risk allocated to positioning based on one's interest rate expectations, so as not to place too much confidence in the accuracy of just one forecast. Additionally, the alignment of expectations between clients and investors is of the utmost importance. For example, the amount of risk budgeted to a rate forecast should vary based on whether a fixed income allocation is meant to provide a hedge to risks across a broader investment portfolio. Substantially reducing the interest

rate sensitivity of a fixed income portfolio could inappropriately increase the downside risk for an investor with large allocations to equities should we experience another economic shock. On the other hand, if an investor's allocation to riskier assets such as equities or high-yield corporates has been declining, the need for that hedge has likely decreased and the fixed income allocation could benefit from reducing duration in expectation of higher interest rates.

Thinking about excess returns

Rate forecasts aside, we believe investors should always be looking to investments with the potential to outperform similar duration U.S. Treasuries. The technical term for this is “excess return” insofar as these investments generate a return in excess of the return generated by Treasuries.

Corporate bonds, for example, pay a yield higher than Treasuries. As long as the spread (the difference in those yields) remains constant, owning corporate bonds will result in an excess return over Treasuries because of this spread. Of course the spreads can widen, which hurts the excess return, or tighten, which improves the excess return. Whether the spread expands or contracts can be correlated to the direction of interest rates but it can also be influenced by other factors, such as the conditions and outlook for the economy as a whole, a particular industry or a specific company.

Ultimately, both corporate bonds and the wide range of securitized assets available in today's bond market typically provide higher yields than U.S. Treasuries while providing some diversification. Treasury Inflation-Protected Securities (TIPS) and floating-rate investments like many commercial mortgage-backed securities (CMBS) and collateralized loan obligations (CLOs), can provide even more diverse profiles of interest rate risk and income. Our outlook for a strong economy and improving fundamentals leads us to believe that such opportunities should provide some spread over Treasuries, creating an additional yield cushion that can help shelter capital against rising interest rates.

Losing when your rate forecast is right – the shortcomings of standard duration measures

When investors consider the interest-rate sensitivity of their fixed income holdings, we think it is critical that they consider the limitations of the standard mathematical estimation of its duration. While there is a general understanding that non-Treasury securities exhibit less interest rate sensitivity than Treasury securities with the same duration, many investors do not systematically account for this in their investment decisions. The standard calculation for duration provides the expected return for a change in the investment's yield, but this mathematical calculation can be unhelpfully simplistic.

Consider Figure 1 below, which shows the historical relationship between changes in the 5-year U.S. Treasury bond yield and the return of the investment-grade corporate bond index. When Treasury yields rise, corporate bond returns have tended to fall. However, the sensitivity of the relationship does not match the mathematical duration of the corporate bond index. Instead, it has empirically behaved like it has a

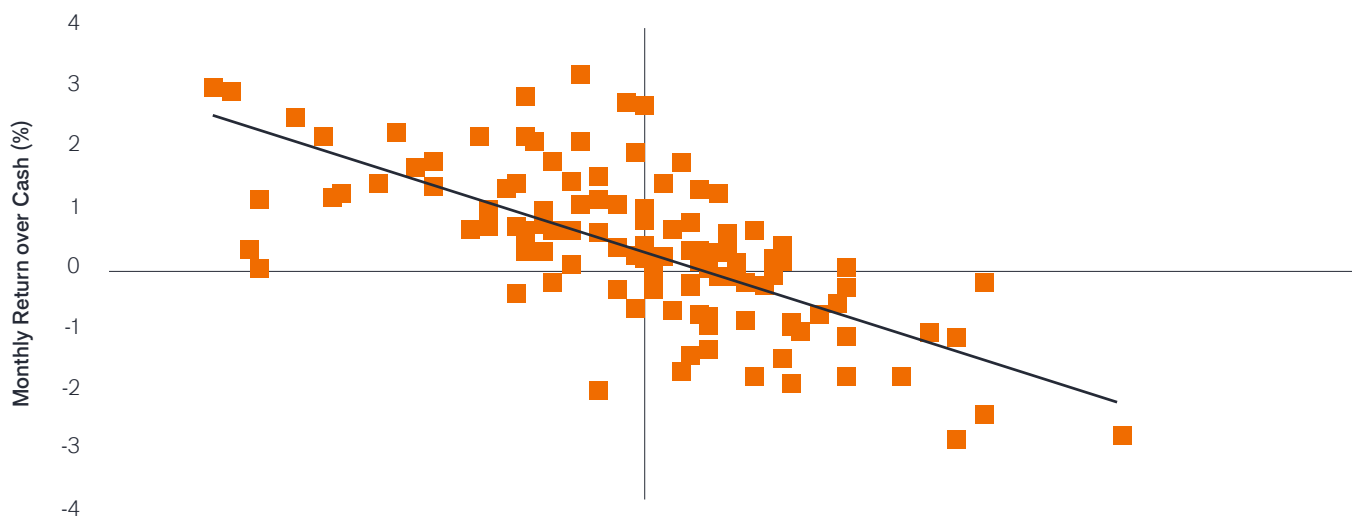
significantly lower duration. The average mathematical duration of the corporate bond index over the period shown was near 7.4 years. However, the slope of the line graphed shows the sensitivity to be closer to 4.7 years – a significant difference, with potentially significant effects on returns.¹

Even if an investor properly forecasts where 10-year Treasury yields will go, knowing how a portfolio will behave empirically is crucial to delivering the intended outcomes. We believe that taking a systematic approach to estimating and using “empirical durations” will lead to better risk-adjusted performance. Failure to do so could lead to underperformance even if your interest rate forecast is accurate.

The logical conclusion

Volatility in markets is not a bad thing. It creates opportunities for active managers. The volatility in 2020, coupled with the interventions by the U.S. Federal Reserve and historic fiscal stimulus, created opportunities for managers to express strong convictions. There is, in our view, nothing wrong with feeling confident about a forecast. The trick is to make sure the resulting positions

Figure 1: U.S. Treasury yield changes versus corporate bond returns



Source: Bloomberg, Janus Henderson, as of 31 March 2021. Corporate Bond returns are represented by the Bloomberg Barclays U.S. Corporate Bond Index, which measures the U.S. dollar-denominated, investment-grade, fixed-rate corporate bond market.

are sized appropriately within an overall risk budget. Humility, and diversity, matter.

Just as we believe in the importance of diversifying risks and holdings within core fixed income portfolios, we believe investors should be mindful of that same diversity across their overall portfolio of investments. The ultimate mix is, ideally, a result of individual goals, risk tolerance and investment views. Given a strong conviction that rates will rise sharply, investors may consider either reducing overall fixed income exposure or making adjustments within fixed income allocations to increase exposure to strategies with lower interest rate sensitivity, including shorter-duration or higher-income strategies.

The key point to remember is in markets with a wide range of outcomes, allocating too much of your risk budget to a single forecast, such as the direction of interest rates, can result in increased risks. A little humility and diversification in portfolio construction can go a long way.

¹ Source: Janus Henderson Investors, as of 31 March 2021. In the regression equation $y=mx+b$, m is the slope of the line, in this case, showing the relationship between changes in Treasury yields and corporate bonds returns. The equation for the regression graphed is $y=-4.7x+0.36$. Thus, the corporate bonds returns have exhibited a duration of 4.7 years.

Glossary

Collateralized Loan Obligations (CLOs): Debt securities issued in different tranches, with varying degrees of risk, and backed by an underlying portfolio consisting primarily of below investment grade corporate loans.

Commercial Mortgage-Backed Security (CMBS): These are fixed income investment products backed by mortgages on commercial properties rather than residential real estate.

Duration: A fixed income security or portfolio's sensitivity to a change in interest rates, measured in terms of the weighted average of all the security/portfolio's remaining cash flows (both coupons and principal). It is expressed as a number of years. The larger the figure, the more sensitive it is to a movement in interest rates. 'Going short duration' refers to reducing the average duration of a portfolio. Alternatively, 'going long duration' refers to extending a portfolio's average duration.

Fiscal stimulus: Fiscal policy is government policy relating to setting tax rates and spending levels. It is separate from monetary policy, which is typically set by a central bank. Fiscal expansion (or 'stimulus') refers to an increase in government spending and/or a reduction in taxes.

Inflation: The rate at which the prices of goods and services are rising in an economy. The CPI and RPI are two common measures. The opposite of deflation.

Securitized: Securitized products are fixed income securities that pool financial assets together to create new securities that can be marketed and sold to investors.

Spread/Credit spread/Yield spread: A measure of how much additional yield an issuer offers over comparable "risk-free" U.S. Treasuries. In general, widening spreads indicate deteriorating creditworthiness of corporate borrowers, tightening spreads are a sign of improving creditworthiness.

Treasury Inflation-Protected Security (TIPS): A type of Treasury security issued by the U.S. government that is indexed to inflation in order to protect investors from a decline in the purchasing power of their money.

Volatility: The rate and extent at which the price of a portfolio, security or index, moves up and down. If the price swings up and down with large movements, it has high volatility. If the price moves more slowly and to a lesser extent, it has lower volatility. It is used as a measure of the riskiness of an investment.

Yield: The level of income on a security, typically expressed as a percentage rate.



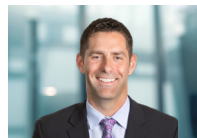
CREDIT MARKET'S BRAVE NEW WORLD



John Lloyd



Andrew Griffiths



Seth Meyer

John Lloyd and Andrew Griffiths, Co-Heads of Credit Research, together with Portfolio Manager Seth Meyer examine the improving credit trends as corporate bond markets emerge from the COVID pandemic but caution that much of this is already priced in.

Key takeaways

- » Corporate failures have been remarkably low considering the extent of economic dislocation but business may yet be tested as support schemes come to an end.
- » Credit ratings appear to be on an improving trend but lenders will want to see evidence that effort is made to reduce borrowing levels built up during the crisis.
- » The default rate may be structurally lower but absolute levels of debt and low yields may limit how much further spreads can tighten.

There were 19,911 corporate bankruptcies in the US in the twelve months to the end of the first quarter of 2021.¹ Behind each one of those figures lies a lot of individual and collective misery.

The coronavirus pandemic has been particularly cruel for some. And yet, what if you were to be told that these figures were down on the previous quarter. Or that the total corporate failures for 2020 was lower than the preceding year. Or that this phenomenon was repeated in other countries such as the UK, France and Germany. Is this really the outcome you would expect from a global pandemic and the accompanying economic dislocation?

If we visit the default rate for high yield bonds (also known as sub-investment grade or speculative grade) we can see a distinct pick-up in companies failing to meet their repayments to bondholders in 2020.

Even here, however, there is something interesting at work. The peak in the default rate is noticeably lower than during the 2007-9 Global Financial Crisis.

Partly, this is because banks were better capitalised so lines of credit were not shut down as the economy slowed. Mostly, it reflects measures taken by central banks and governments to facilitate lending. Ultra-low interest rates, together with asset purchases to anchor financing costs at lower rates, appear to have worked. Similarly, government emergency support such as furlough schemes, grants and cheap loans have helped companies through a revenue shortfall as parts of the economy have been shut down.

Forgive but not forget

There has also been a lot of forbearance. Recognising the special circumstances we are in, governments have lowered taxes or stretched the period in which taxes can be paid. Landlords have allowed tenants to temporarily alter rent terms and leasing companies have allowed delayed payments. Creditors have permitted greater flexibility to borrowers by allowing the share of borrowing not earmarked for specific purposes to rise and average tenors to be increased. The understanding is that companies will act to cut borrowing levels when normal economic life resumes.

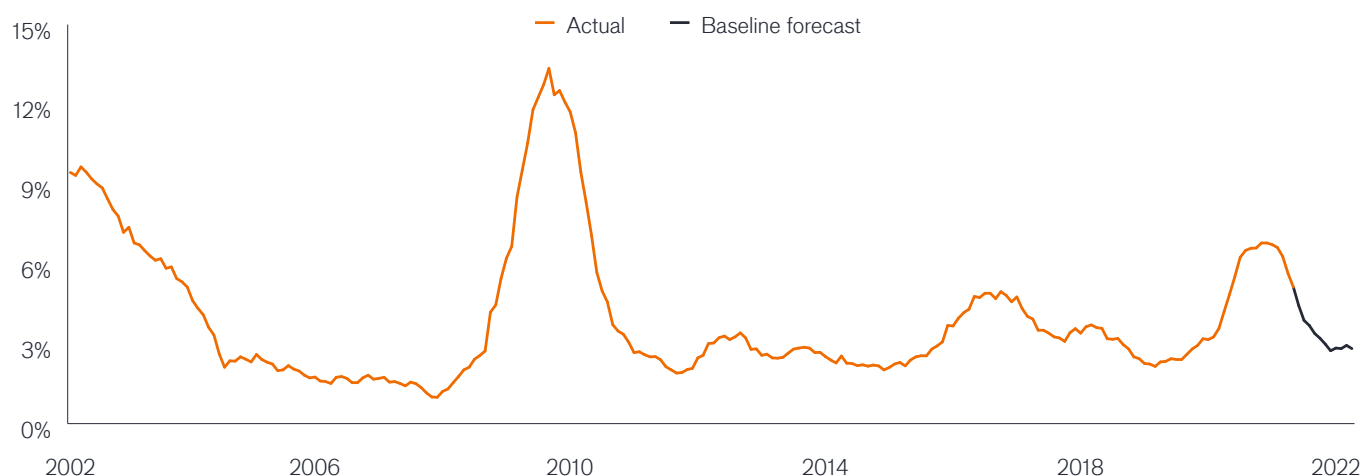
Yet, the bills will come due. Furlough schemes are set to end, and as other temporary support measures are removed there is the prospect of fresh setbacks. There may yet be a lag in insolvencies.

Downgrades and ratings migration

For the credit rating agencies, companies have been downgraded and some have been demoted from investment grade into sub-investment grade (so-called fallen angels). Yet, we are probably through the worst. Morgan Stanley points out that fallen angels tend to cluster around economic shocks such as recessions as the change in status from investment grade to high yield is typically involuntary.

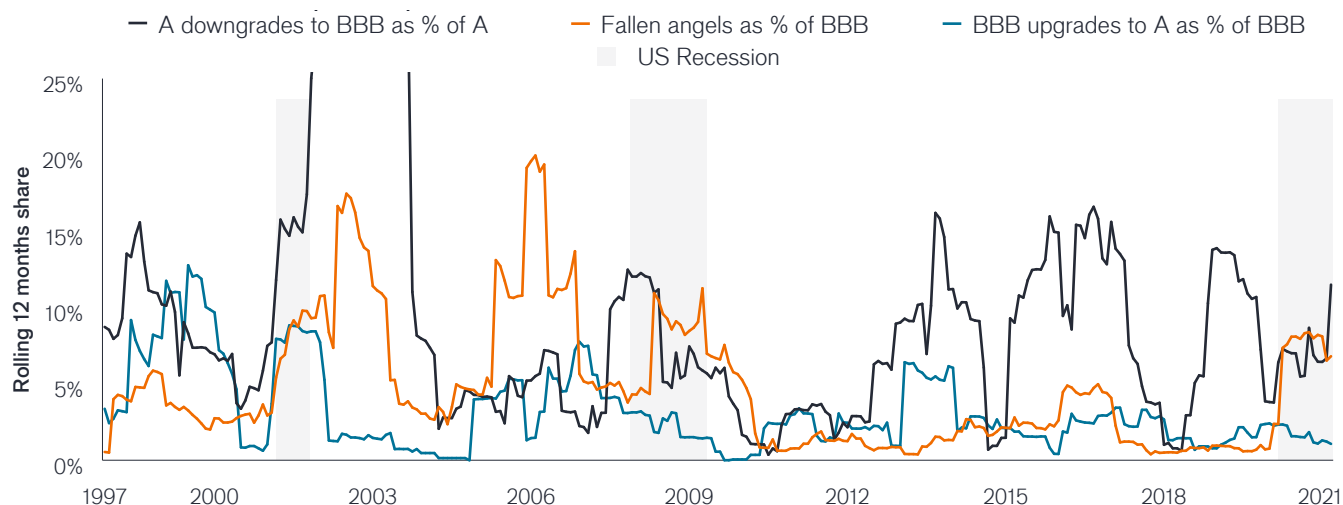
In contrast, downgrades from A to BBB occur regularly outside of recessions. This is because the benefit of retaining an A rating versus a BBB rating in terms of

Figure 1: Global speculative-grade default rate, trailing 12 months



Source: Moody's Default Report, 12 May 2021. Moody's baseline forecast for the year to April 2022. The forecast is an estimate only and is not guaranteed.

Figure 2: US industrials: fallen angels tend to be clustered around economic shocks



Source: Morgan Stanley Research, 4 May 2021, US Industrials (non-financial, non-utility). The grey bars indicate periods of recession. The lines show upgrades or downgrades over a rolling 12-month period as a percentage share of a credit rating band. Credit rating agencies assign credit ratings to bond issues. Investment grade rating bands are AAA, AA, A, BBB with AAA being the highest ranking and BBB the lowest. 31 January 1997 to 31 March 2021.

lower funding costs is often not as great as the cost of losing a BBB investment grade rating and paying the higher cost of capital associated with a high yield rating. As such, company managements may be prepared to tolerate movement within investment grade ratings for reasons of corporate direction (such as borrowing to pursue growth) but are less keen on losing investment grade status.

What is remarkable is the speed at which recovery is taking place. The early part of 2021 has already seen the return of 'rising stars', these are companies that are recognised by ratings agencies as having sufficiently strong balance sheets and financial prospects to move up from high yield to investment grade. Fiat Chrysler, the autos group, Smurfit, the packaging company, and Verisign, the technology group, are just a few examples of companies that have made the transition up to investment grade status since the start of the year.

Cash: precautionary to predatory

Companies have been reasonably good at cash management during the crisis. This has come principally from two sources. First, many companies took to slashing capital expenditure. This offered a quick means of retaining cash but could potentially tarnish growth prospects in the future as projects that would have delivered returns go unrealised.

Admittedly, some of the capex may have been wasteful but it is probably no accident that governments around the world are keen that companies make up lost ground. Whether it is US President Biden's proposed Infrastructure Bill, the disbursements of the Next Generation European Union (NGEU) Recovery Fund, or the UK's super-deduction that allows companies to offset tax against capex, there is an emphasis on productive – and sustainable – capital investment.

Second, companies have raised fresh capital. If we look just at Europe, Bank of America estimates that euro area non-financial companies have raised €949 billion of fresh debt capital between March 2020 and April 2021 with a 55:45 split in favour of bond issuance versus bank loans. High yield companies have been more active than investment grade in terms of net supply of new bonds, with net growth as a percentage of initial size of the market outstripping growth in investment grade markets in euro, US dollar and sterling markets.²

The question now is whether this cash, which last year was being raised for precautionary purposes, becomes a 'war chest' for future projects, including potentially bondholder-unfriendly merger and acquisitions, dividend hikes or share buy-backs.

Swift recovery

The vaccine programmes mean that economies in many parts of the world are starting to reopen. Earnings are expected to swiftly recover. Companies had become reasonably good at coping with COVID by reconfiguring supply chains and seeking out new ways to reach customers. With reopening, however, more cyclical sectors such as energy and leisure have seen bond prices rally in response to higher commodity prices and the gradual removal of lockdown restrictions.

Cash flows had already begun to mend by the end of last year and should rise further as operating revenues recover. There will of course be some demand on cash for restocking and working capital as activity ramps up but the prospects for companies to begin the long process of tackling their higher debt burdens will commence. This is not inconsiderable, given that many companies have had to finance a year of reduced revenues.

The good news is that central bankers are alert to their plight. While it is not in their remit to keep unprofitable businesses afloat, they are determined to keep monetary policy accommodative to allow the recovery to cement itself. In fact, market volatility earlier this year was predicated on fears that central banks were paying too much attention to supporting economic growth and not

enough to the risks of rising inflation. For now, we agree with the central banks. The rate of change in economic data is currently distorted but will likely slow both for economic growth and inflation as base effects work their way through the figures.

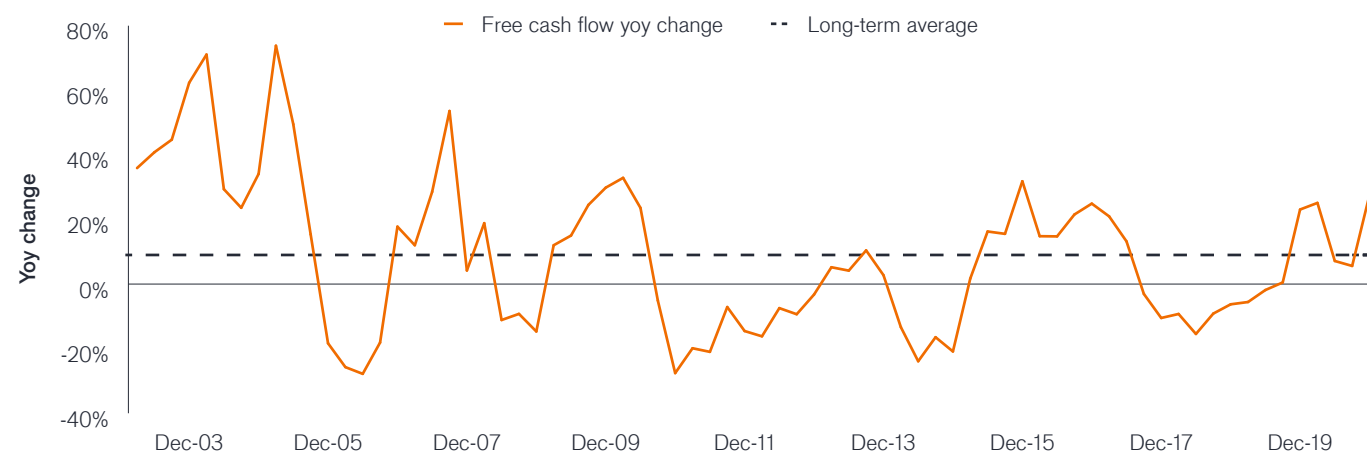
This all paints a reasonably upbeat picture of rising earnings, an improving trajectory for credit ratings and a low default environment. But is much of this priced in? After all, credit spreads which widened during the crisis have since narrowed back towards their tights.

Intriguingly, Deutsche Bank in its recent annual default study noted that while the default rate has become structurally lower in the last couple of decades, credit spreads have remained at similar average levels (see Figure 4). Investors are being paid the same for taking on much less default risk. Or, to flip it around, investors are being paid more for taking on a given level of default risk.

They point out that companies are benefiting not just from the low interest rate environment helping to keep funding costs low, but also from profits having taken a higher share of gross domestic product (GDP). US corporate profits have averaged around 11.6% of GDP since 2004, compared with 7.7% in the years prior to 2004.³

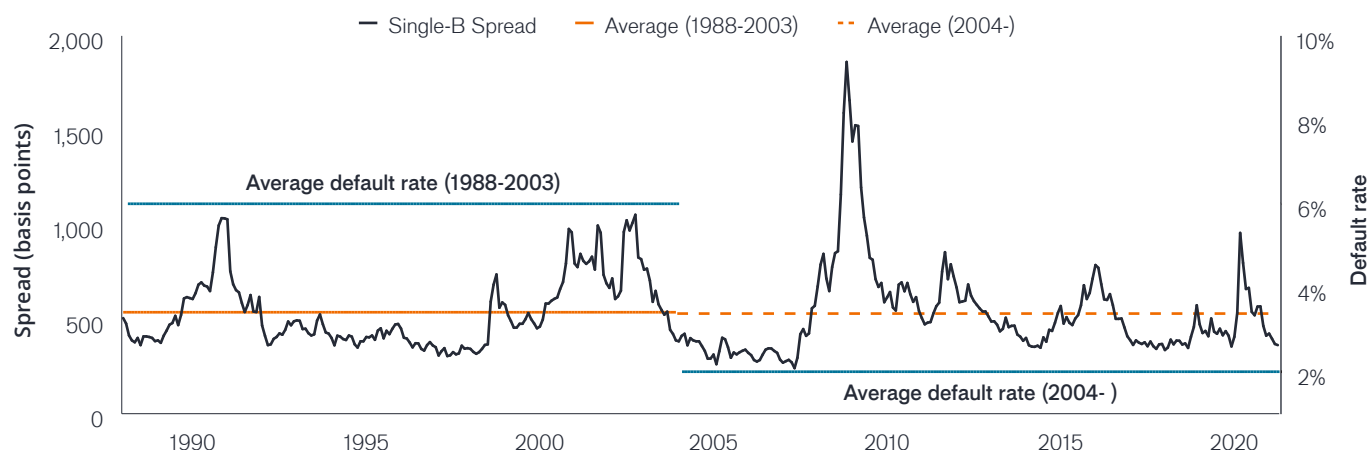
Figure 3: Cash flow is on the mend

European high yield free cash flows improving



Source: Morgan Stanley Research, Bloomberg, as at 28 May 2021. Company data, Q1 2003 to Q4 2020. yoy = year-on-year change over last 12 months.

Figure 4: USD Single B average spreads (bps) and average default rates



Source: Deutsche Bank, ICE Indices, S&P, as at 25 May 2021. Data for 31 January 1988 to 30 April 2021. Basis point is 1/100th of a percent. 100 basis points = 1%.

The post-COVID bargain

Can companies continue to extract a high proportion of GDP? This is a key question and one that is worth keeping an eye on in the coming months and years. Governments are likely to want payback for their emergency assistance. The US and UK are set to raise corporate taxes and there is growing global enthusiasm to establish a common tax on digital sales. Issues of inequality were also raised during the pandemic, which is placing pressure on governments and companies to improve pay for the low-paid. Similarly, environmental, social and governance considerations and consumer and investor pressure mean companies can no longer shirk their responsibilities in these areas.

Perhaps the market is being sensible by recognising that while default rates are structurally lower, this is offset by higher overall levels of debt and a still uncertain outlook. We should also treat spread levels with caution as they are the additional yield on top of the government bond yield of equivalent maturity. With government bond yields at low levels, the tight spreads mean corporate bond yields are also low. Investors think in absolute levels as well as relative levels. Outperformance within credit markets, therefore, is likely to rely more on selecting individual corporates with improving fundamentals rather than the general spread tightening that has characterised much of the past year.

¹ Source: Administrative Office of the US Courts, as at 28 May 2021. Table F-2: Business and Non-business Cases Commenced, by Chapter of the Bankruptcy Code. Data for All Chapters during the 12-month period ending 31 March 2021.

² Source: Bank of America Global Research. 'Credit Strategy – Europe: Dawn of the European credit upgrade cycle', 19 May 2021.

³ Source: FRED, US corporate profits before tax as a percentage of US GDP, periods Q1 2004 to Q1 2021, and Q1 1988 to Q4 2003.

Glossary

Monetary policy: The policies of a central bank, aimed at influencing the level of inflation and growth in an economy. It includes controlling interest rates and the supply of money. Monetary stimulus refers to a central bank increasing the supply of money and lowering borrowing costs. Monetary tightening refers to central bank activity aimed at curbing inflation and slowing down growth in the economy by raising interest rates and reducing the supply of money.

Spread/credit spread: The difference in yield between securities with similar maturity but different credit quality. Widening spreads generally indicate deteriorating creditworthiness of corporate borrowers, and narrowing indicate improving.

FOR MORE INFORMATION, PLEASE VISIT JANUSHENDERSON.COM

Janus Henderson
— INVESTORS —

The views presented are as of the date published. They are for information purposes only and should not be used or construed as investment, legal or tax advice or as an offer to sell, a solicitation of an offer to buy, or a recommendation to buy, sell or hold any security, investment strategy or market sector. Nothing in this material shall be deemed to be a direct or indirect provision of investment management services specific to any client requirements. Opinions and examples are meant as an illustration of broader themes, are not an indication of trading intent, are subject to change and may not reflect the views of others in the organization. It is not intended to indicate or imply that any illustration/example mentioned is now or was ever held in any portfolio. No forecasts can be guaranteed and there is no guarantee that the information supplied is complete or timely, nor are there any warranties with regard to the results obtained from its use. Janus Henderson Investors is the source of data unless otherwise indicated, and has reasonable belief to rely on information and data sourced from third parties.

Past performance is no guarantee of future results. Investing involves risk, including the possible loss of principal and fluctuation of value.

Not all products or services are available in all jurisdictions. This material or information contained in it may be restricted by law, may not be reproduced or referred to without express written permission or used in any jurisdiction or circumstance in which its use would be unlawful. Janus Henderson is not responsible for any unlawful distribution of this material to any third parties, in whole or in part. The contents of this material have not been approved or endorsed by any regulatory agency.

Janus Henderson Investors is the name under which investment products and services are provided by the entities identified in the following jurisdictions: (a) **Europe** by Janus Capital International Limited (reg no. 3594615), Henderson Global Investors Limited (reg. no. 906355), Henderson Investment Funds Limited (reg. no. 2678531), Henderson Equity Partners Limited (reg. no. 2606646), (each registered in England and Wales at 201 Bishopsgate, London EC2M 3AE and regulated by the Financial Conduct Authority) and Henderson Management S.A. (reg no. B22848 at 2 Rue de Bitbourg, L-1273, Luxembourg and regulated by the Commission de Surveillance du Secteur C-0621-38303 06-15-22 TL

Financier); (b) the **U.S.** by SEC registered investment advisers that are subsidiaries of Janus Henderson Group plc; (c) **Canada** through Janus Capital Management LLC only to institutional investors in certain jurisdictions; (d) **Singapore** by Janus Henderson Investors (Singapore) Limited (Co. registration no. 199700782N). This advertisement or publication has not been reviewed by Monetary Authority of Singapore; (e) **Hong Kong** by Janus Henderson Investors Hong Kong Limited. This material has not been reviewed by the Securities and Futures Commission of Hong Kong; (f) **Taiwan** R.O.C by Janus Henderson Investors Taiwan Limited (independently operated), Suite 45 A-1, Taipei 101 Tower, No. 7, Sec. 5, Xin Yi Road, Taipei (110). Tel: (02) 8101-1001. Approved SICE licence number 023, issued in 2018 by Financial Supervisory Commission; (g) **South Korea** by Janus Henderson Investors (Singapore) Limited only to Qualified Professional Investors (as defined in the Financial Investment Services and Capital Market Act and its sub-regulations); (h) **Japan** by Janus Henderson Investors (Japan) Limited, regulated by Financial Services Agency and registered as a Financial Instruments Firm conducting Investment Management Business, Investment Advisory and Agency Business and Type II Financial Instruments Business; (i) **Australia and New Zealand** by Janus Henderson Investors (Australia) Limited (ABN 47 124 279 518) and its related bodies corporate including Janus Henderson Investors (Australia) Institutional Funds Management Limited (ABN 16 165 119 531, AFSL 444266) and Janus Henderson Investors (Australia) Funds Management Limited (ABN 43 164 177 244, AFSL 444268); (j) the **Middle East** by Janus Capital International Limited, regulated by the Dubai Financial Services Authority as a Representative Office. No transactions will be concluded in the Middle East and any enquiries should be made to Janus Henderson. We may record telephone calls for our mutual protection, to improve customer service and for regulatory record keeping purposes.

Janus Henderson, Janus, Henderson, Perkins, Intech, Knowledge Shared and Knowledge Labs are trademarks of Janus Henderson Group plc or one of its subsidiaries. © Janus Henderson Group plc.

666-15-438303 06-21