

BNP PARIBAS ASSET MANAGEMENT LONGER-TERM RISK/RETURNS UPDATE

WHAT TO EXPECT AFTER THE GREAT PANDEMIC OF 2020



PROSPECTS AND FORECASTS FOR
RETURNS FROM THE PRINCIPAL ASSET
CLASSES OVER THE NEXT 5-7 YEARS



BNP PARIBAS
ASSET MANAGEMENT

The asset manager
for a changing
world



The range of possibilities on the economic side are still extraordinarily wide, we do not know exactly what happens when you voluntarily shut down a substantial portion of your society... In 2008 and 2009, our economic train went off the tracks and there were some reasons why the roadbed was weak. This time we just pulled the train off the tracks and put it on its siding and I don't really know of any parallel.



Warren Buffett speaking at the virtual annual meeting of Berkshire Hathaway in May 2020

FOREWORD

In this edition of our annual publication, BNP Paribas Asset Management presents its latest expectations for the medium-term returns of most major asset classes.

In the first quarter of 2020, global capital markets sustained one of their greatest shocks in history, driven by the COVID-19 pandemic. Much still depends on how well public health and economic authorities deal with its impact and aftermath.

This comprehensive publication is divided into two sections. In section 1, we provide an analysis of the prospects for the principal asset classes. In the second section, we detail the forecasts for returns over the next five to seven years. These forecasts are produced by our valuation models.

The pandemic and subsequent measures by policymakers have left investors with a stark choice. On the one hand, even lower interest rates for even longer in developed economies. On the other hand, heightened volatility in equities.

The hunt for yield has already occupied investors for a number of years. It will only intensify in the wake of COVID-19. To earn attractive returns, investors face multiple challenges. The phenomenon of negative yields will continue to accompany us, especially on the high-rated government bonds that many pension funds and insurance companies like – or even need – to invest in for regulatory reasons.

The volatility of equity markets will continue to constitute a major test. As a result, pension funds' funding ratios and the solvency positions of insurance companies should remain under pressure.

To tackle any challenges, investors should build robust portfolios that can withstand negative market developments, but that also deliver sufficient returns over time.

This requires diversification over asset classes, regions and currencies. It also necessitates ingenuity in the search for alternative premia to enhance portfolio returns via, for example, targeting the illiquidity premium, leading to new or greater allocations to illiquid asset classes. In addition to a premium for illiquidity, these investments can bring stable cash flows and additional diversification.

However, there are many more strategies to invest in to collect alternative premia, both in the fixed income and equity product ranges. Another critical theme is sustainable investing which, post-COVID-19, can contribute to higher returns and better risk mitigation over time. There are many ways to implement a more sustainable investment strategy. At BNP Paribas Asset Management, we have strongly advocated integrating environmental, social and governance (ESG) criteria into investments for a long time, so we are happy to support you in this matter.

For investors, this environment means that they will have to consider, even more so than in the past, all the different investment opportunities and their risks to build the portfolios that best fit their requirements. We hope this publication will support you in meeting your objectives.

JULY 2020



- Anton Wouters -

Head of Solutions & Client Advisory team

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EXECUTIVE SUMMARY

An unprecedented health crisis has uprooted medical care, financial markets and the prospects for the global economy. It has left asset allocators reeling as some markets seek to find their footing after a sizeable sell-off, while other markets have benefited from a safe-haven bid.

The impact ranges from a likely retrenchment from globalisation, and supply and demand shocks, to a massive increase in government debt as authorities strive to support economic sectors, businesses and households. Central banks are coming to the rescue, buying up the government bonds issued to preserve economies, and – at least in some countries – the corporate debt that businesses need to keep themselves afloat. Investors can expect yields to be lower for longer and equity returns, too, amid the demand shock. German government bond (Bund) yields could come under more downward pressure, but UK gilts are attractive, in our view.

Corporate bond risk premiums ('spreads') look set to remain high as, for example, company profits take a blow and credit ratings deteriorate in the economic downturn. We expect central bank bond buying, first and foremost in the US, to contain the upside pressure on yields (capping funding costs) and to put a floor under the credit market. Still, investors will seek compensation for risk. The resulting hunt for yield, once it resumes as risk aversion wanes, can be expected to favour equities. As a word to the wise, though, we would caution against overly rosy expectations of an earnings recovery. Too many uncertainties argue against a wholesale rush into equities, even if near-average valuations, particularly for the broad US and European markets, are seen as a siren call. A tactical approach appears more suitable.

As for emerging market assets, equities face near-term risks, but valuations are broadly reasonable, with markets in some countries seemingly good value and some sectors with higher multiples able to offer even better long-term growth potential than before the crisis.

SECTION I

A NEW ERA BEGINS IN THE HUNT FOR YIELD

The longest equity bull market in history was brought to end by a quintessential 'black swan' event. Certainly, no 2020 outlooks suggested a pandemic comparable to the Spanish flu of 1918-19 would sweep the world and trigger a global recession. The only consolation perhaps is that the coronavirus has breathed new life into the fixed-income bull market whose demise has been predicted repeatedly over the last several years.

The subsequent rebound in the markets has been just as swift as lockdowns proved effective in stemming the spread of the virus. These measures came at great economic cost, however, and as governments relax restrictions, infection rates are rising again. Equity markets will consequently face a more challenging environment ahead.

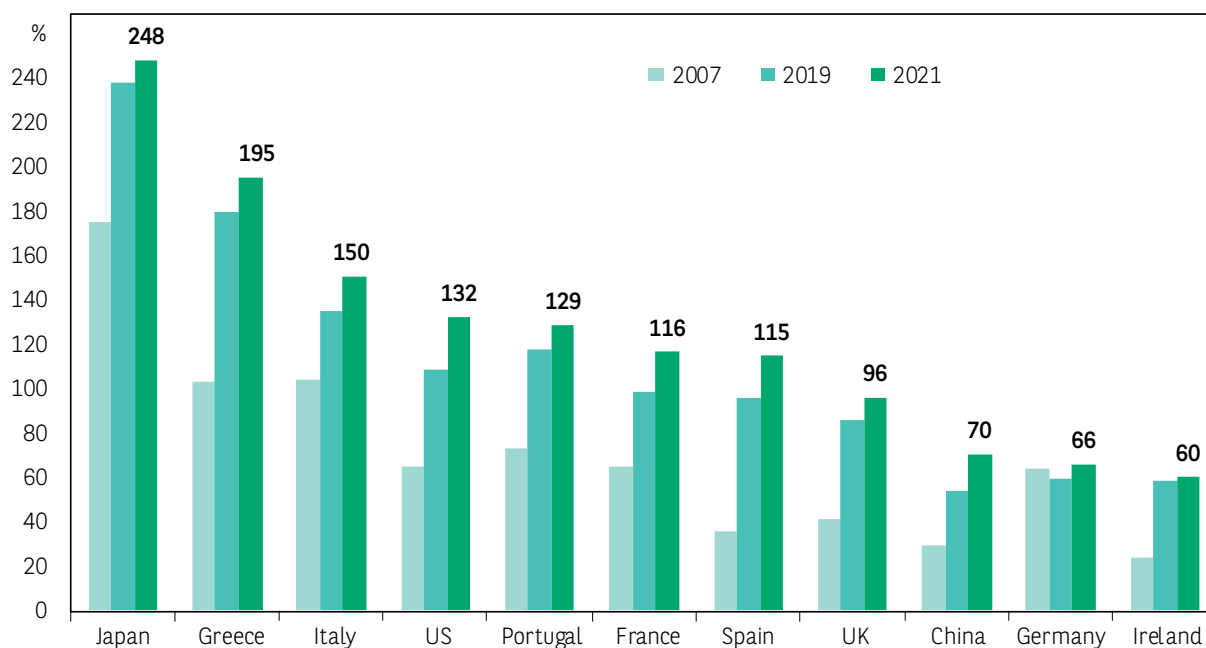
While there are certainly long-term implications for investors, the coronavirus has generally exacerbated previously existing trends rather than launching new ones. The move away from globalisation will likely accelerate. Debt levels had already been rising since the Global Financial Crisis (GFC) and are now set to increase further. The hunt for yield will become even more acute. Equities remain one of the few asset classes offering growth potential.

To the degree that the 2008 GFC and the 2011-12 eurozone crisis were caused by excessive indebtedness, addressing the current crisis with more debt might not seem the best solution. But in much the same way as more alcohol is often cited as a cure for a hangover ("the hair of the dog that bit me"), more debt seems to be the solution to the economic collateral damage caused by necessary government measures to combat the coronavirus pandemic.

It wasn't supposed to be like this. Central bankers had hoped that governments would take advantage of low interest rates from their quantitative easing (QE) measures to lower indebtedness. Not surprisingly, just the opposite happened. With the notable exception of Germany, debt-to-GDP levels in most large countries rose sharply after the 2008 crisis.

With global GDP set to fall sharply this year and nearly USD 15 trillion in stimulus announced so far, these ratios are bound to rise even further (see Figure 1). The increases are smaller than after the GFC, however, and central banks are likely to buy a significant share of the new debt as QE programmes are expanded and extended.

Figure 1: Gross government debt-to-GDP levels look set to rise further
(in percentage; 2021 estimated)



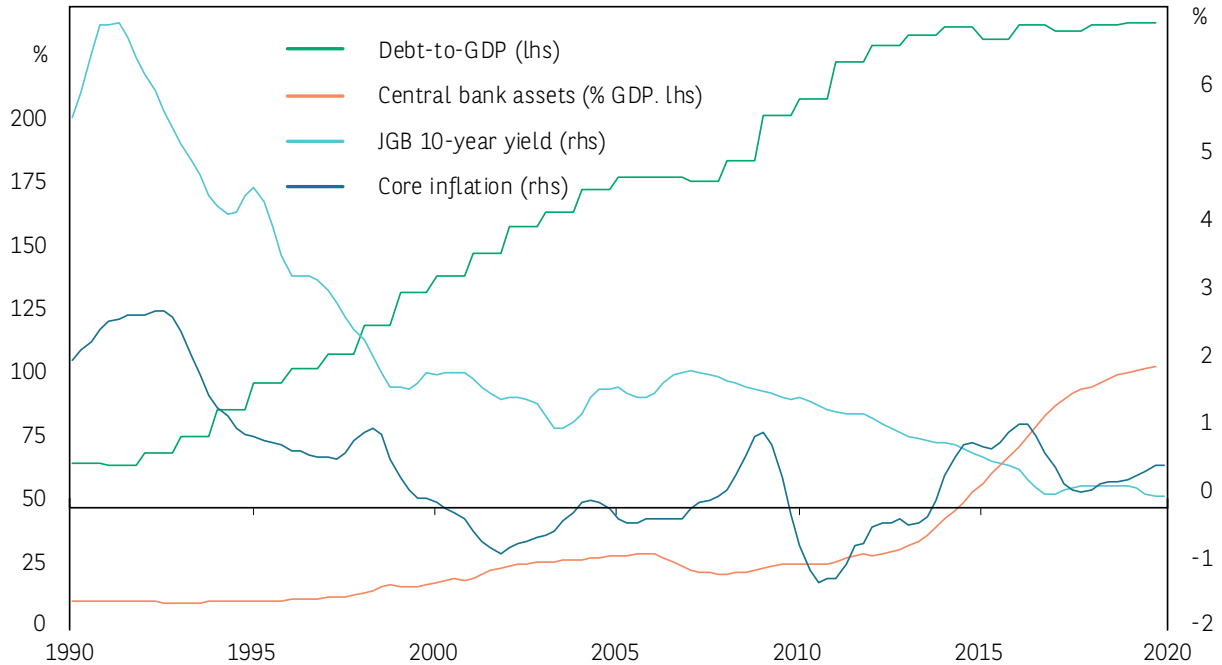
Data as at 9 April 2020. Note: Debt is gross debt. Source: IMF, BNP Paribas Asset Management

HOW SUSTAINABLE IS THIS, AND WHAT ARE THE IMPLICATIONS FOR GOVERNMENT BOND YIELDS AND ECONOMIC GROWTH?

The nearest historical parallel relevant for the US and Europe is Japan, where the government debt-to-GDP ratio rose from just under 50% in the early 1990s to over 200% by 2012. Nominal interest rates initially fell as Japan moved closer and closer to deflation, but then were relatively stable over the next decade.

With the launch of Abenomics in 2013, the Bank of Japan began to buy assets on a massive scale, but importantly, the Abe government also lowered the budget deficit as it raised taxes and cut spending on pensions and healthcare. Low interest rates thanks to QE also helped. As a result, the debt-to-GDP ratio stabilised (see Figure 2).

Figure 2: Japan's debt-to-GDP stabilised as quantitative easing (QE) was stepped up and interest rates fell



Data as at 9 April 2020. Note: Debt is gross debt. Source: IMF, BNP Paribas Asset Management

WHAT MIGHT THIS TELL US ABOUT THE OUTLOOK FOR THE US AND EUROPE?

Debt levels can perhaps rise much higher than we might think without spurring an increase in government bond yields, that is, as long as there is either a sufficient number of willing domestic investors or a willing central bank to buy the debt. This still accurately describes the situation in the US and Europe, with the US having the additional advantage of its 'exorbitant privilege' with many international investors eager to buy US dollar-denominated Treasuries.

While there must still be some limit on how high debt-to-GDP ratios can rise, there is no theoretical cap on how much of it the central bank can buy. While the Bank of Japan already owns assets worth more than 100% of the country's GDP, in Europe and the US, the proportions are much lower, at just 35% for the US Federal Reserve (Fed), 33% for the Bank of England and 45% for the ECB.

The discussion among European leaders about fiscal and monetary support for those countries particularly hard hit by the coronavirus leaves open the question about the potential for the ECB to indefinitely purchase 'peripheral' eurozone government bonds. The central bank's current EUR 750 billion Pandemic Emergency Purchase Programme (PEPP) should enable 'peripheral country' governments to finance any supplementary spending this year. This explains why the yield on 10-year Italian BTPs remains below the level reached during the market sell-off in the fourth quarter of 2018. The decision by the German Federal Constitutional Court questioning the legality of an ECB QE programme has revived investor concerns about the longer-term viability of the eurozone as a whole. Crucially, whether bonds purchased by the ECB can remain on the bank's balance sheet forever will be a key factor for investors in evaluating the solvency of these countries.

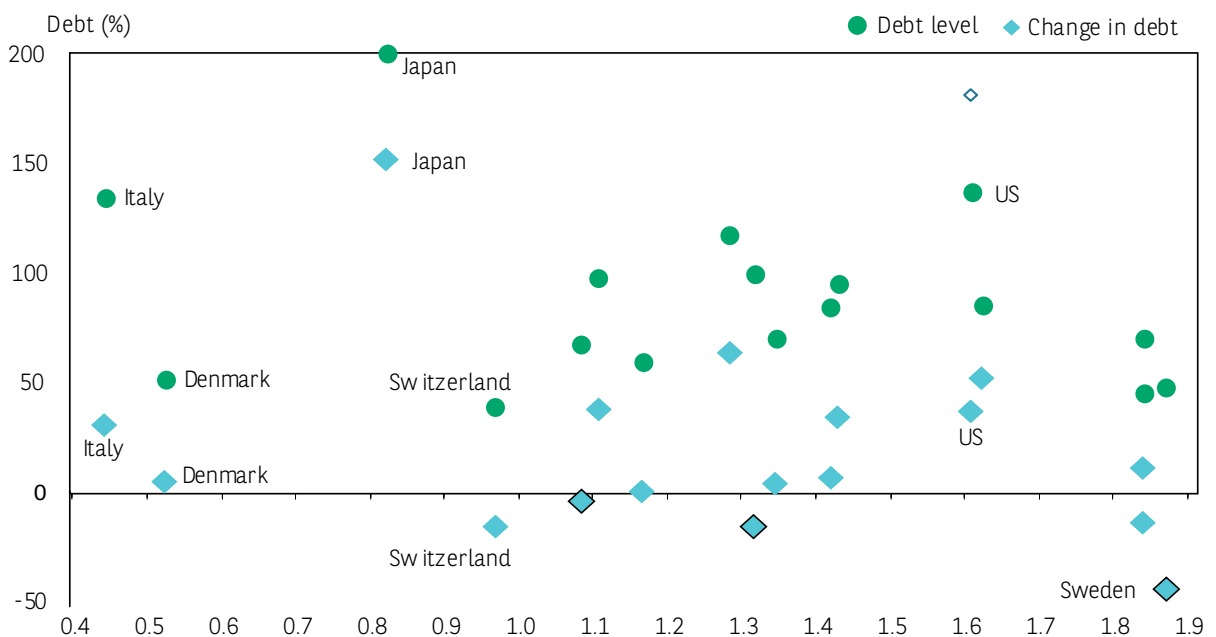
WHAT ABOUT THE PROSPECTS FOR ECONOMIC GROWTH?

The other concern besides the impact of high debt levels on bond yields is the effect on growth. The traditional argument is that the government can ‘crowd out’ private sector investment by absorbing a disproportionate share of household savings.

This concern seems less relevant today when, if anything, there is an insufficient supply of highly rated government debt to meet the needs of investors, particularly those looking to match liabilities over a long-term horizon. Nor is it obvious that Japan’s rising debt was the cause of its poor economic performance over the last few decades. If anything, it was likely the reverse: insufficient growth due partly to rigid labour markets and poor demographics necessitated more borrowing to finance social obligations.

Even adjusting for Japan’s declining population, though, GDP growth has been disappointing. Since 1992, per capita growth has averaged just 0.8% versus an average of 1.3% for other developed countries. While another highly-indebted country, Italy, has had even worse economic growth per capita, other much less indebted countries have hardly done better, for example Denmark and Switzerland (see Figure 3). With interest rates low and likely to stay low, both because of subdued inflation and thanks to central bank support, higher debt burdens should not materially affect a country’s growth prospects. Economic reform (or the lack thereof) will matter much more.

Figure 3: Per capita GDP growth, debt levels and debt growth
(in %; selected developed countries)



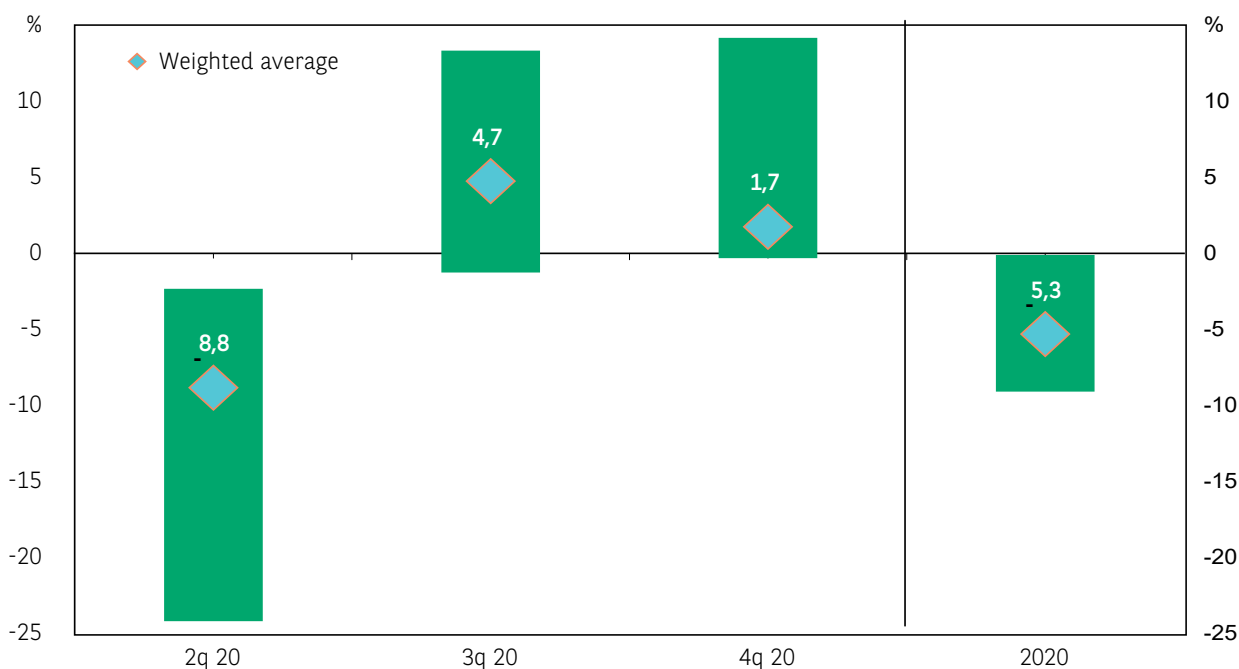
Data as at 10 April 2020. Note: Debt level is latest debt-to-GDP ratio. Change in debt is change from 1992 or earliest available date in the debt-to-GDP ratio. Source: Haver, BNP Paribas Asset Management

The more immediate worry is the economic outlook and whether enough fiscal and monetary support is being provided to offset the impact of the social distancing measures imposed to combat the virus.

Estimating GDP growth for the upcoming quarters is inevitably hazardous given the multitude uncertainties we face. We do not know how successful countries will be in relaxing social distancing measures without a surge in infections necessitating a re-imposition of controls. Even if this turns out not to be required, we do not know how willing consumers will be to go back to work or restaurants without a vaccine being widely available. Will consumption return to pre-crisis levels if consumers worry about their jobs? Even if they are willing, how well can companies function under social distancing restrictions? Many simply cannot produce as before, meaning profitability will suffer and low-margin businesses could go under.

Consequently, there is an extraordinarily wide range in economist estimates for US GDP growth, for example, from -2.3% to a contraction of 24% in the second quarter (see Figure 4). Encouragingly, estimates for the whole of 2020 are less dispersed as the steep fall in the second quarter is expected to be followed by commensurately large rebounds in the third and fourth. Nonetheless, estimates for the full year, currently at an average of -5.3%, are much worse than the 3.9% fall in GDP during the GFC.

Figure 4: US GDP forecasts are ranging far and wide
(in percentage, quarter on quarter)



Data as at 19 July 2020. Source: Bloomberg, BNP Paribas Asset Management

If citizens are kept home for too long and businesses remain shut, the odds rise of a much bigger increase in business failures, sustained high levels of unemployment and the inability of governments to fully replace the lost activity. No government can simply borrow a year's worth of GDP. Despite policymakers' efforts to protect jobs and businesses, we do not believe the economy will avoid hysteresis effects – meaning that we will not get a V-shaped recovery, and that this recession will leave deep, lasting scars that will impact its future productive capacity. Many businesses will simply choose to fold (temporarily or permanently), despite the availability of loans for some. Some sectors may never fully recover.

As of late mid-July 2020, more than 50 million people – equal to nearly a third of US workers – had filed for unemployment benefits since the pandemic took hold. These benefits will not fully replace lost income or meet medical insurance costs. As businesses and consumers are turning extremely cautious, the Keynesian spending multipliers are set to kick in. The government's efforts to inject fiscal stimulus, provide employment subsidies, guarantee and subsidise loans and encourage creditor forbearance will help, but these tools will likely still be too blunt to repair the damage fully.

GOVERNMENT BOND YIELDS – EVEN LOWER FOR EVEN LONGER

Following the Fed's move to 'unlimited QE', US 10-year Treasury yields have moved between 0.5% and 1.2% depending on market sentiment and oil prices. Though concern about the economic outlook will likely keep yields at around the low end of this range in the near term, the lower-for-longer mantra of the last 10 years has only become even truer.

Bunds have been unable to match the fall in US Treasury yields this year despite the arguably greater economic fallout from the pandemic in Europe. Below, we list a number of possible explanations for the outperformance of US Treasuries relative to Bunds:

- The resilience in Bund yields reflects a comparatively less potent central bank (or at least one buying fewer Bunds than in the past) and already negative rates dampening further declines.
- The growth outlook of Germany relative to that of the US is mixed.
- The fiscal measures adopted so far in Germany to support the economy are somewhat larger than in the US, but more stimulus is likely to come in the US.
- Germany is better placed to withstand the impact of the crisis than the US as the government reacted relatively quickly to the outbreak, but then again, the lockdown measures have been more restrictive.
- The healthcare system has managed well under the strain and the country has seen comparatively few deaths.
- The *Kurzarbeit* system, which proved its worth during the GFC, keeps workers employed (if not necessarily working) and paid so that they can quickly return to their posts once it is allowed.
- Without the kind of uncertainty that unemployment causes for workers in the US, even with supplemental income payments from the government, German consumers might be less inclined to reduce consumption.

The net effect is that the 10-year Treasury-Bund spread has fallen from the 200bp it has averaged over the last five years to about half that. While the domestic economy may be resilient, Germany still depends on demand from its European neighbours. Two-thirds of Germany's exports are to the rest of Europe of which half to the eurozone. German growth and Bund yields should reflect this drag and we would anticipate the spread widening again due to a fall in Bund yields.

WHAT WILL THE US FEDERAL RESERVE DO LONGER TERM?

In the credit markets, residential and commercial mortgage defaults are likely to rise, many high-yield corporate bonds will likely default, and bank loan books may well turn sour. Ultimately, many private-sector losses may have to be transferred onto either the Federal Reserve's or the government's balance sheet, and effectively be socialised.

From a policy perspective, the Fed is likely to maintain rates at zero for several years and have no choice but to fund the deficits and bailouts that the federal government will have to administer, either by expanding QE, or implementing yield curve control. In effect, the US will monetise a large part of a rapidly growing national debt burden, as Japan has done.

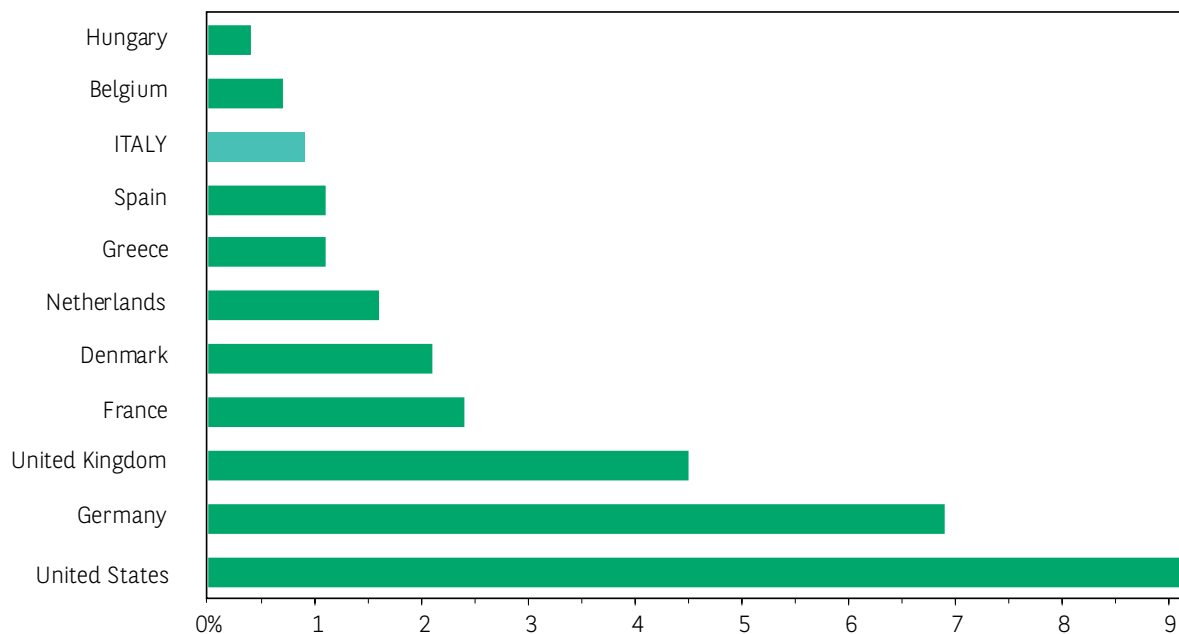
Looking at real yields, the Fed's medium-term objective is clear: drive them as low and as negative as possible. The US economy will need negative real yields for a long time to help work off the debt burden. It is critical that real yields be held well below the economy's long-term trend growth for years to come. The relevant historical parallel is the Federal Reserve/Treasury Accord of the 1940s and 1950s, in which the Fed capped Treasury yields at levels well below the economy's trend growth rates for many years to grow the economy out of its debt burden from the Second World War

MUTUALISED DEBT ISSUANCE BY EUROPEAN UNION MEMBER STATES TO RE-BALANCE THE FISCAL BOOST

The key issue for the Italian government is that even though 10-year BTP spreads over Bunds have widened since February, the absolute yield remains low (~1.5%) and the government should have few difficulties in refinancing existing debt and raising additional funds to support the economy through the crisis. In fact, Italy's fiscal stimulus so far has been modest compared to that of many other developed countries. This reflects the constraints the country (along with Spain and Greece and unlike Germany) faces in increasing already high debt levels (see Figure 5).

Figure 5: Immediate fiscal boost from stimulus packages

(percentage of 2019 GDP, based on measures announced as at 31 March 2020)



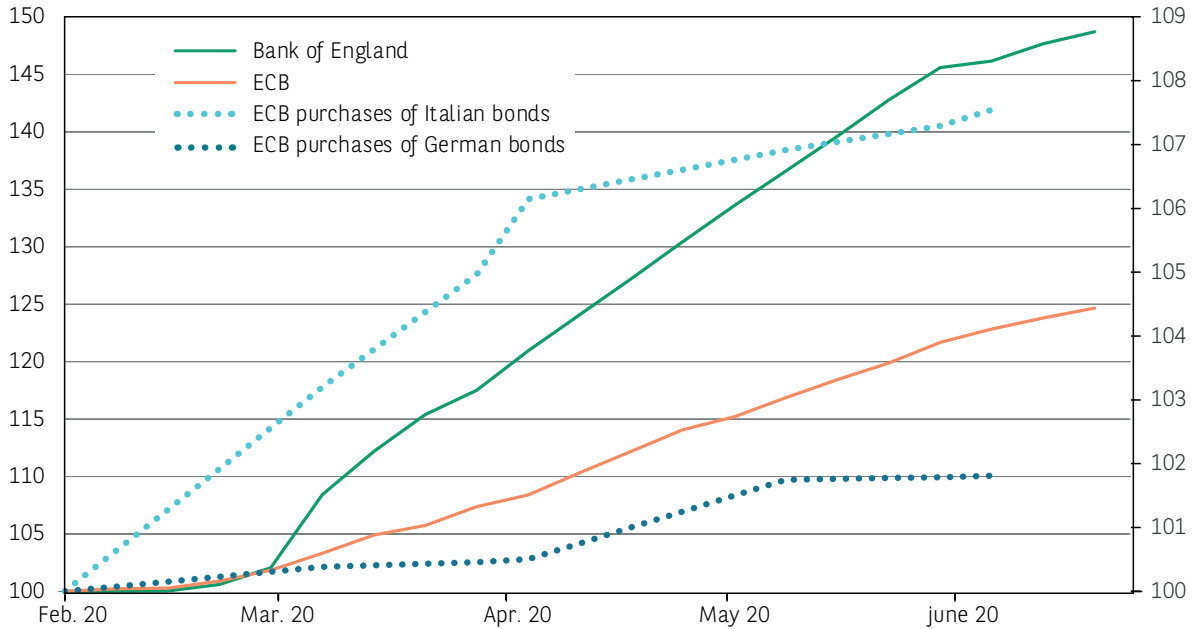
Data as at 13 April 2020. Source: Bruegel, BNP Paribas Asset Management

Additional support from the European Union, most notably the Next Generation EU programme, should also help the economy recover into 2021. There is political risk as the failure of the Eurogroup to attach conditions to the funds could embolden eurosceptic parties in Italy, but any realistic moves away from the euro still appear improbable.

Since the ECB is able to support the government bond market, at least for now, yields on Italian government bonds appear attractive, though in the short term, spreads could widen as discussions among EU members drag on. The question of whether the ECB can hold the bonds, if not indefinitely, then at least for a long time, remains to be answered.

While UK gilts sold off commensurately to Bunds in mid-March, they have rallied by more since, perhaps because of the larger amount of QE purchases by the Bank of England relative to the ECB (see Figure 6). Though the additional purchases planned by the two central banks are of the same size (about 10% of bonds outstanding), the ECB's purchases have been concentrated on Italy and Spain rather than Germany.

Figure 6: Change in central bank government bond holdings
(26 February 2020 = 100)



Data as at 19 July 2020. Source: ECB, Bank of England, BNP Paribas Asset Management

Though all countries will see a slowdown in economic growth due to the crisis, the UK may fare worse thanks to somewhat poor management of the pandemic. The government is providing generous income replacement (80% of wages) to those workers (including the self-employed) unable to work because of the virus. This should support inflation expectations relative to those for the continent.

Moreover, the risk of a cliff-edge Brexit at the end of the year has not disappeared as the UK government still insists that agreement can be reached in the next months despite negotiations having been suspended for several weeks because of the coronavirus outbreak. While the crisis could give the government a face-saving way to extend the talks, which is an option most of the public supports, there are few indications the government plans to take this path. With a positive coupon, a more focused central bank and Brexit risk, gilts look attractive relative to core eurozone debt.

INFLATION – MORE DISINFLATION ON THE WAY

The biggest recent driver of inflation expectations so far this year was the collapse in oil prices, which have remained well below 2019 levels. While demand shortfalls and excess supply may keep prices subdued for a while, we still expect a modest recovery into 2021. The more fundamental question is how inflationary or disinflationary the coronavirus recession will be. We foresee the following impact on inflation:

- The short-term impact on US CPI from the COVID-19 crisis is likely to be negative overall.
- Energy prices have clearly collapsed, and this will pass through into petrol and heating oil prices.
- Food prices are likely to rise as the cost of manufacture and distributions will increase given public health restrictions.
- Prices of most core goods categories will soften, as retailers mark-down prices to maintain sales and reduce inventories. In other categories, prices could rise if there are supply shortages due to manufacturing and distribution shut-downs (electronic equipment, for example).
- There could be CPI collection difficulties for many categories and services. The US Bureau of Labor Statistics may therefore be unable to update prices for certain categories, where it cannot collect sufficient data, in which case the index for that category will be left unchanged. For some categories, an unchanged CPI index will actually overestimate the true rate of inflation.
- Over the next few quarters, the impact of a severe recession is also likely to be disinflationary. The economic impact of public health measures and uncertainty is to throttle both aggregate demand (workers lose income if they don't go to work, and opportunities to consume if they are confined), and aggregate supply (businesses cannot and will not produce without workers or orders). Overall, however, we would expect the slump in aggregate demand to dominate the decline in supply, and for inflation to fall. Core goods prices will likely further contract, while core services prices will soften, but be robust enough to keep overall core CPI inflation positive.
- In the longer term, however, as aggregate demand recovers, we could see the economy push up against capacity constraints given the damage done to potential output. Furthermore, it seems highly likely that pre-existing international trade tensions, as well as concerns over the resilience of highly connected global supply chains in an age of pandemics and great-power rivalries will result in a lurch towards protectionism. One can imagine that after the crisis, many industries and products will be designated as critical for national security, with governments supporting domestic producers. Ultimately, this reversal of globalisation should be inflationary, limiting competition as it does. Politically, it is also highly likely that electorates whose financial fragility will have been exposed by a mandated lock-down will demand changes to the current economic structure in which wealth and incomes have become so concentrated. Higher wages and more generous healthcare benefits are inflationary. On the other hand, we cannot deny the potential for automation, technology and price transparency in the age of the internet to continue to limit inflationary pressures.

CORPORATE CREDIT – POLICYMAKERS ARE TARGETING CORPORATE DEBT MARKETS

The most significant innovation in central bank policy responses to the coronavirus was the decision by the Fed to not only purchase US corporate bonds (which the Bank of England and ECB had already done), but to also expand the programme to include high-yield corporate debt exchange-traded funds (ETFs). No other central bank had done this before, though the ECB may yet follow suit to some degree. Not only did these decisions spark a rally in the corporate bond market, they also allowed companies to raise funds again directly from investors.

The questions facing investors now are two-fold.

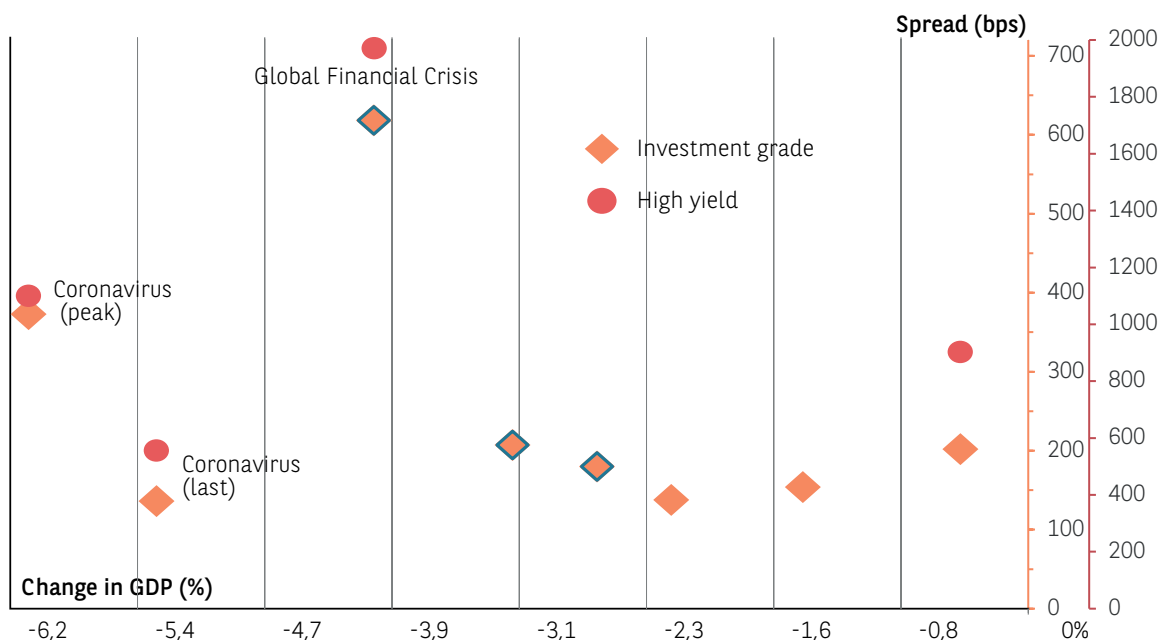
- Had spreads widened by enough prior to the Fed's announcement to offer an attractive risk-reward trade-off given the rising downgrades and defaults?
- Have the Fed's moves simply reduced the reward, but not the risk?

The answer depends on how damaging one expects the recession to be. If it is sharp but short with a swift recovery, only the most over-indebted companies should default and many 'fallen angels' could be restored to at least a financial 'holy' status.

Judging by the amount of spread widening we saw through 19 June, the markets seemed to have a more pessimistic view. During recessions in the US over the last 50 years, investment-grade bond spreads widened from 50bp to 500bp points depending on the depth of the recession. The 2008 GFC was exceptional in that spreads widened by much more relative to the fall in GDP, but the increase in yields arguably reflected the financial stresses during the crisis as much as the actual decline in economic activity. During most recessions, the widening has averaged just 90bp (see Figure 7).

Figure 7: Credit spreads and US recessions – further upside looks likely

(change in GDP in percentage from peak to trough and peak in spreads in basis points)

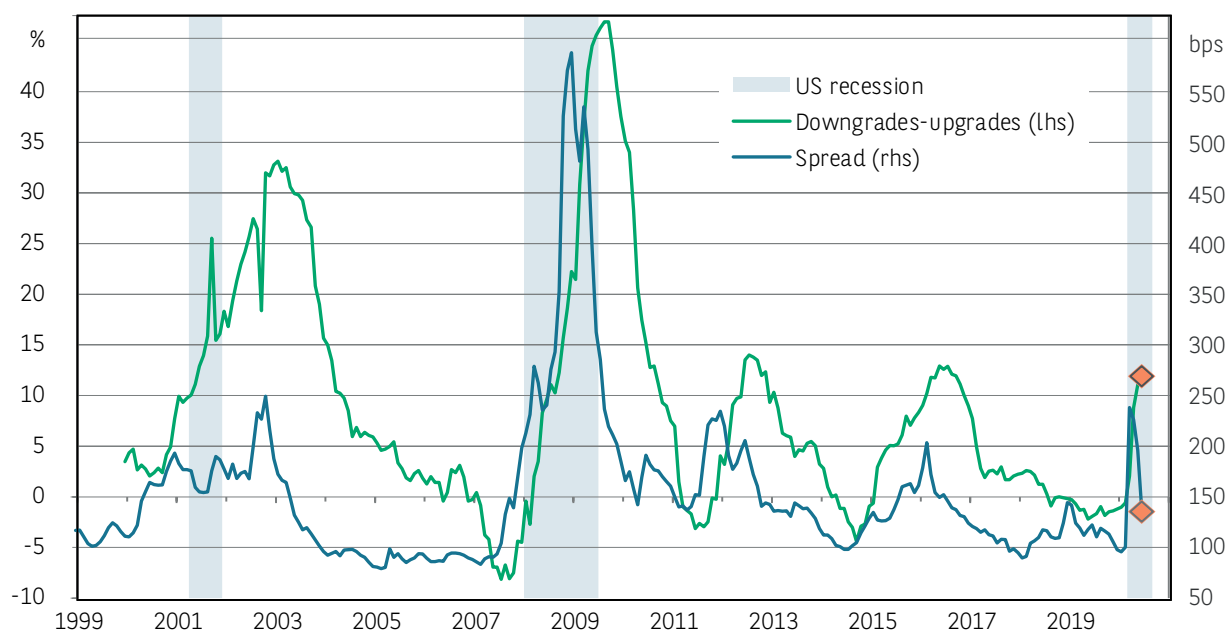


Data as at 19 July 2020. Note: Recessions from 1973. Blue border indicates recession of above-average length. "Coronavirus (peak)" shows spreads as at 23 March 2020. "Coronavirus (latest)" is as at 21 April 2020. GDP estimate is Bloomberg weighted average consensus. Source: Bloomberg, BEA, BNP Paribas Asset Management

At the widest spread levels on 23 March, markets were pricing in a recession deeper, or longer, than any since the 1970s with the exception of the GFC. The three orange diamonds in the chart with a blue border correspond to the three lengthier recessions (17 months versus 7 months for the other three).

At peak spreads, we believe IG credit offered an attractive risk-reward trade-off, but thanks to the Fed's commitment to buy bonds in both the primary and secondary markets, spreads have fallen back to the equivalent of peak spreads during earlier, less severe, recessions. Given the uncertainty about the duration of the current recession and subsequent downgrade risk, spreads may well start climbing again over the next several months. Historically, once the economic outlook begins to deteriorate, spreads can widen over a considerable period. Even the brief sell-off in 2011 around the eurozone crisis lasted six months (see Figure 8). We nonetheless remain positive on corporate credit relative to government bonds as the support of central banks will prevent spreads from widening as much as they have in the past, and government support is unlikely to stop given how much has already been committed so far (in for a penny, in for a pound).

Figure 8: Credit spreads and rating downgrades – has the peak yet to come?
(trailing 12-month moving average)



Data as at 19 July 2020. Note: Downgrades less upgrades is expressed as a share of total number of issuers. Source: ICE, BNP Paribas Asset Management.

Beyond the impact of the recession on corporate profits, there is the additional effect on sectors such as retail and office space. They will be further burdened by the changes in consumer and business behaviour such as consumers buying more online and more employees working permanently from home. Nonetheless, the downside risk to corporate bond yields appears to have been minimised by the Fed's new initiative.

History is less helpful in evaluating high-yield spreads as there have only been two recessions when there were published high-yield bond indices. While the Fed is also

buying high-yield bond ETFs, it will not prevent corporate defaults. We think defaults could reach 8-10% in the US this year, well above previous periods when spreads were equally high.

The market expected a liquidity crunch for companies, but that is now morphing into a solvency crisis. Companies are likely to leave this crisis with weak demand, so the ones that faced operational stresses at the beginning of the crisis will be further burdened in the coming months. Consequently, it is likely that the tail of the default cycle will be longer and a V-shaped recovery in returns for high-yield bonds looks unlikely.

EMERGING MARKET DEBT AND THE ABSENCE OF A CENTRAL BANK BACKSTOP

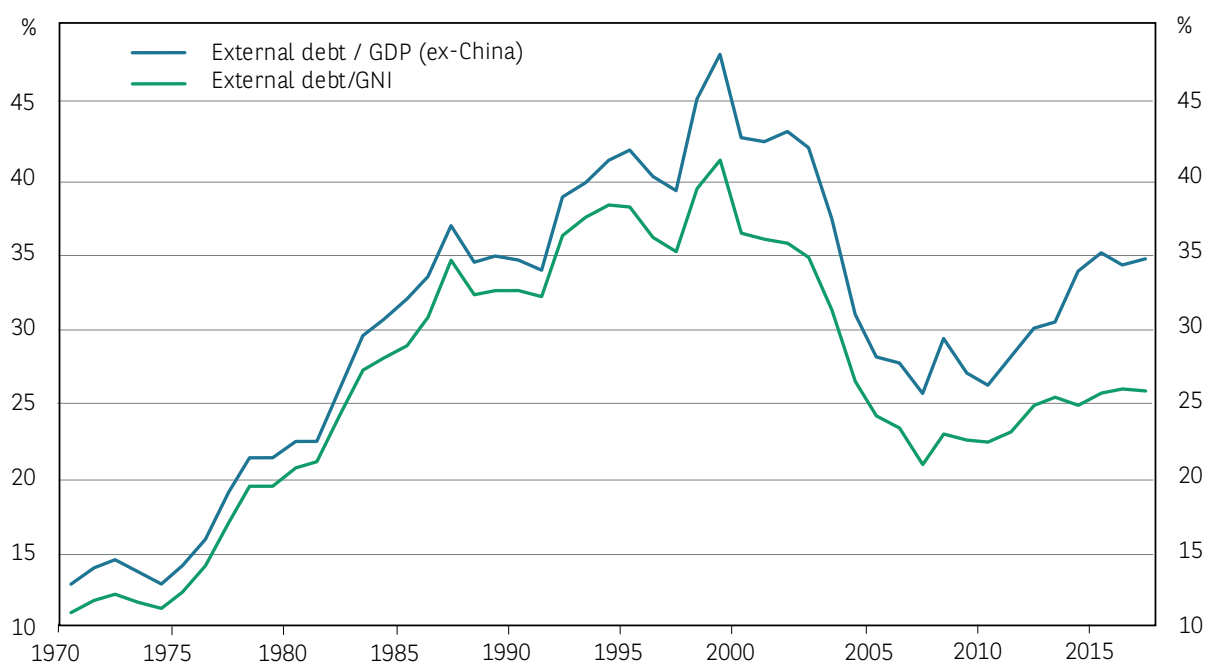
Similar to countries and companies in the developed world after the global financial crisis, emerging market countries and corporates responded to the abnormally low interest rates engendered by QE by taking on even more debt. Investors desperate to find higher yielding assets welcomed this behaviour, even as they chose to ignore the higher risk.

Unfortunately, today, few emerging markets have the equivalent of a Fed or ECB that can buy the additional debt they will now need to issue to offset the effects of the coronavirus. Furthermore, investors have become much more cognizant of the risks of what they have bought.

There is one consolation: countries are in a better position today than before the Asian financial crisis. After that trauma, countries built up foreign reserves and lowered debt levels, allowing them to go through the GFC relatively unscathed (see Figure 9). They are unlikely to be as fortunate this time as the coronavirus crisis is truly global, while arguably the GFC was primarily a calamity for the US and Europe.

Figure 9: Emerging market external debt-to-GNI

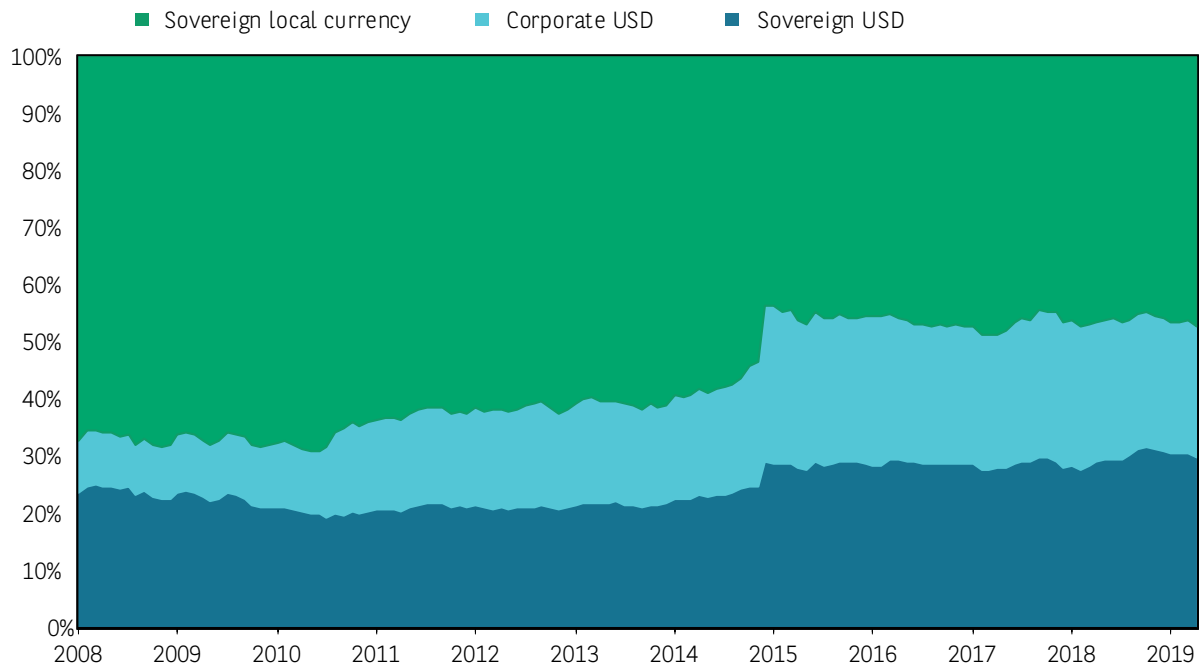
(low & middle-income countries per World Bank definition. GNI = Gross National Income)



Data as at 24 April 2020. Source: World Bank, BNP Paribas Asset Management

As debt has risen over the last decade, the share of investors' US dollar exposure to emerging markets has increased too: from one third of traded assets to one half today. At the same time, EM corporates have also significantly raised their issuance of US dollar debt (see Figure 10).

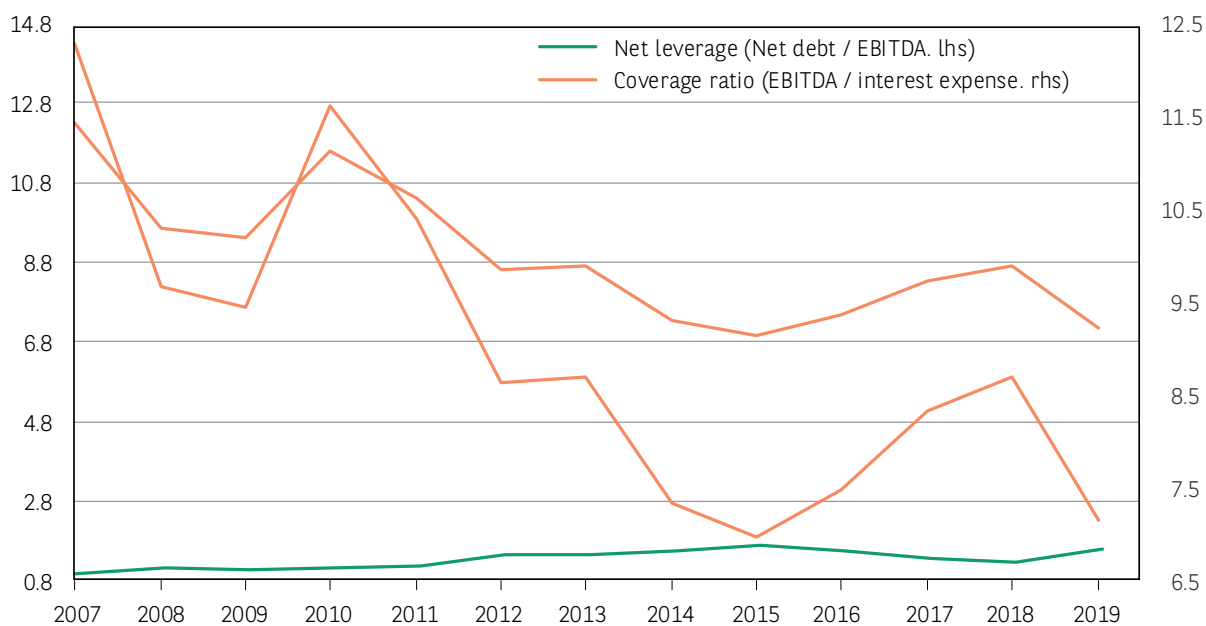
Figure 10: Composition of tradeable emerging market (EM) debt



Data as at 28 April 2020. Source: JPMorgan, BNP Paribas Asset Management

Given the plunge in the value of EM currencies versus the US dollar in recent months (the JPMorgan Emerging Market Currency index has dropped by 11% this year), foreign holders of US dollar debt at least have the comfort of not being directly exposed to currency risk. The ability to repay, however, has declined as country and corporate revenues have fallen along with GDP, trade, tourism and oil prices. Before the crisis, corporate credit metrics had already worsened sharply (see Figure 11).

Figure 11: Emerging market corporate debt metrics



Data as at 29 May 2020. Note: 80% of universe has reported for 2019.

Source: FactSet, BNP Paribas Asset Management

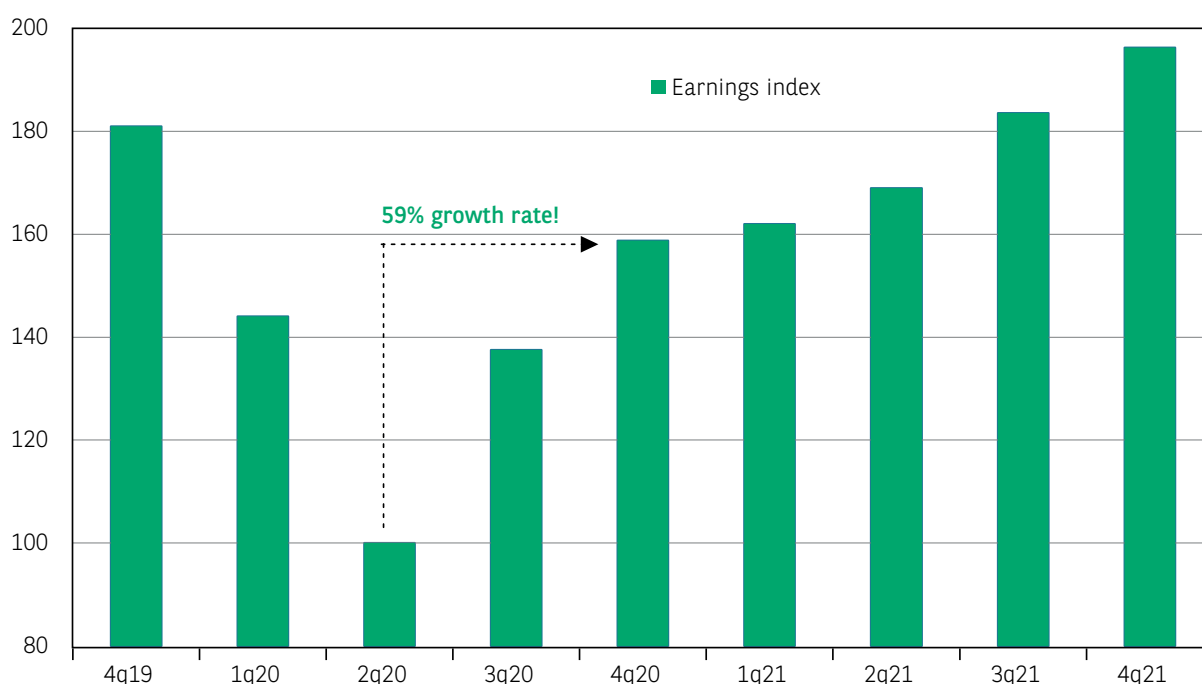
While USD emerging market corporate bond index spreads are now well above the average of the last 10 years, the same is true for sovereign bonds and we feel the risk is better compensated in that part of the market. Yields on local currency government debt, on the other hand, are near historic lows. With the risk of further US dollar strength, there seems to be little upside in the asset class.

EQUITIES – A REBOUND BUILT ON SAND?

While the rally in equities from 23 March has been partly fuelled by central bank support, the gains are much greater than can be explained by the relatively modest decline in government bond yields and the discount rate applied to corporate profits. We see a renewed disconnect between the bond and equity markets, with equities reflecting a too-complacent view of countries' ability to quickly and sustainably remove social distancing restrictions.

Consensus estimates reflect a rosy 'V-shaped' recovery in earnings for the US market, with earnings per share (EPS) rising by over nearly 60% in the second half of the year (see Figure 12). As infections rise along with the exit from lockdowns, some social distancing measures may remain in place indefinitely and consumers will be reluctant to spend after such a deep recession, harming profits. By comparison, after the GFC, it took nearly two years for the profits of S&P companies to reach the same level as analysts now expect the market to achieve in six months.

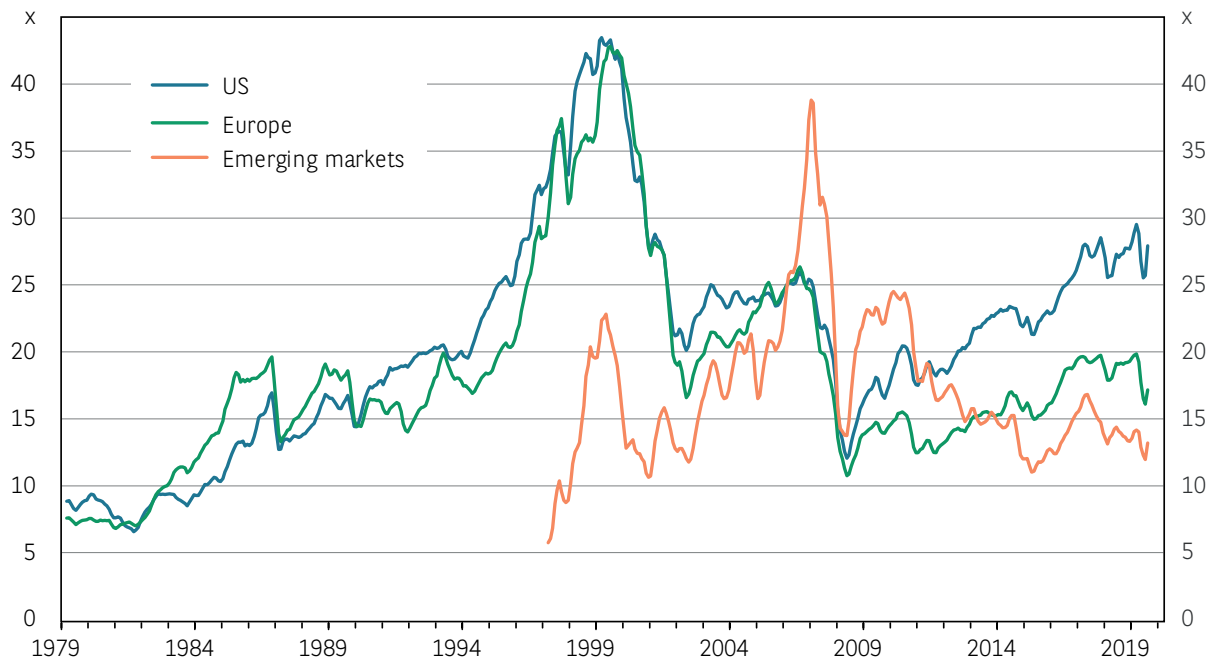
Figure 12: S&P 500 earnings index – equities see a V-shaped recovery
(consensus estimates from Q2 2020)



Data as at 19 July 2020. Source: FactSet, BNP Paribas Asset Management

Inevitably, a bear market improves equity valuations and at the lows of March, multiples were as attractive as they have been in several years for many developed markets, and near historic levels for emerging markets (see Figure 13). For the broad MSCI All Country World index (ACWI), the percentile ranking of cyclically-adjusted price earnings (CAPE) at the end of March was 40%, modestly below the long-run average.

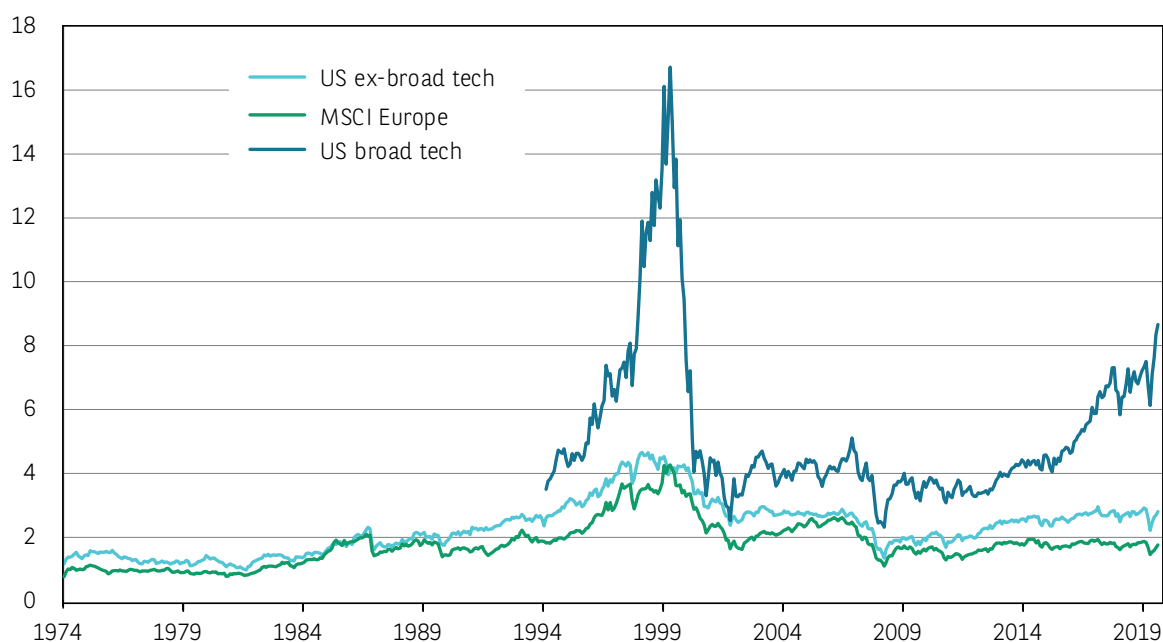
Figure 13: Cyclically-adjusted price earnings (CAPE) ratio – modestly below the long-run average



Data as at 30 June 2020. Source: MSCI, BNP Paribas Asset Management

The US market nonetheless appears much more expensive than the rest of the world, but much of the premium is concentrated in 'broad' technology, defined as the Global Industry Classification Standard (GICS) technology, internet retail, movies and entertainment, and interactive media industries. Using another measure of valuations, the price-to-book ratio, for broad tech, the PB ratio is indeed as high as it has been since the tech bubble at the end of the 1990s, whereas the multiple for the rest of the US market is not far off the value for Europe, both of which are near average (see Figure 14).

Figure 14: Price-to-book ratios – Europe and US are near average



Data as at 19 July 2020. Note: Broad technology made up of information technology sector, internet and direct marketing retail industry, movies and entertainment sub-industry, and interactive media and services industry. Source: MSCI, BNP Paribas Asset Management

IS THE PREMIUM IN THE BROAD TECHNOLOGY SECTOR WARRANTED?

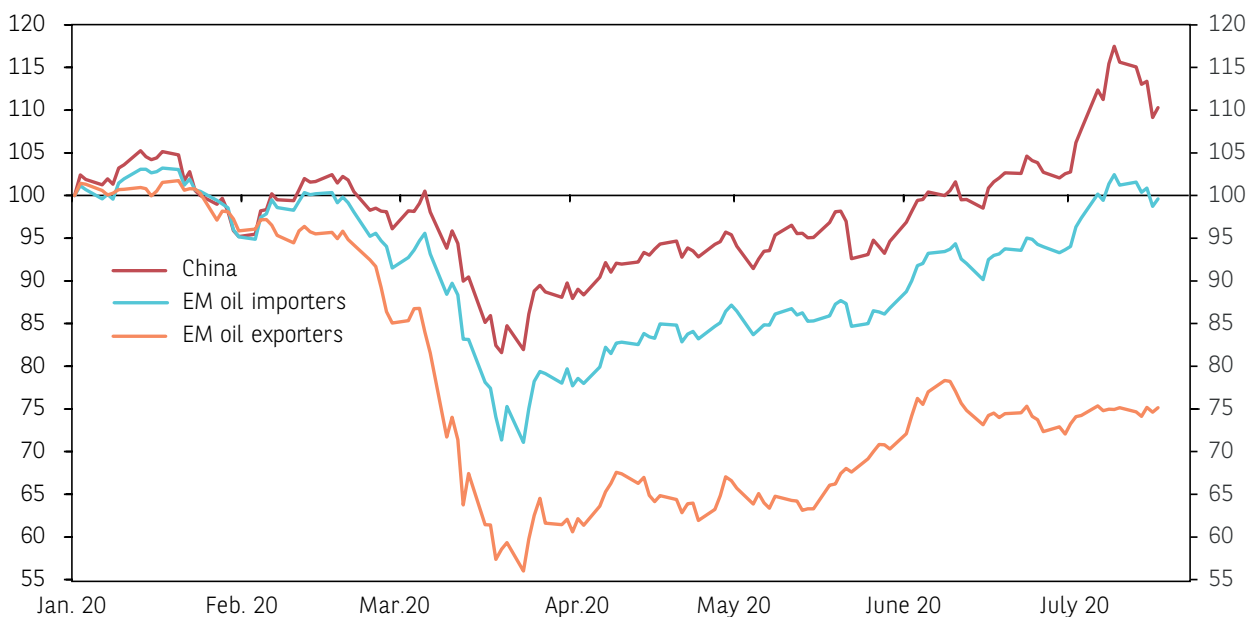
The coronavirus pandemic is likely to lead to more people working permanently at home, requiring additional internet infrastructure investment. Consumer habits are changing with internet retail and streaming services becoming increasingly popular. Both doctors and patients have become more comfortable with telemedicine. All of these trends will drive higher earnings growth for the broad technology sector.

Tellingly, long-run earnings per share (EPS) growth forecasts for Europe are over 180bp lower now than they were at the beginning of the year, and 50bp lower for the US ex-broad technology, but they have risen by 90bp for broad tech. Technology multiples are too high today and we expect them to compress, though that may well happen simply by earnings rising, while prices stagnate for a while rather than through a sudden reversion to long-run mean multiples.

AS FOR EMERGING MARKET EQUITIES...

Valuations are among the most attractive of the main global regions, but this may also reflect the significant challenges many countries face. The collapse in oil prices has had a clear negative impact on the performance of oil-exporting countries whose equity performance has lagged that of oil importers by nearly 25% this year (see Figure 15).

Figure 15: Emerging market oil exporters and importers – equity market performance



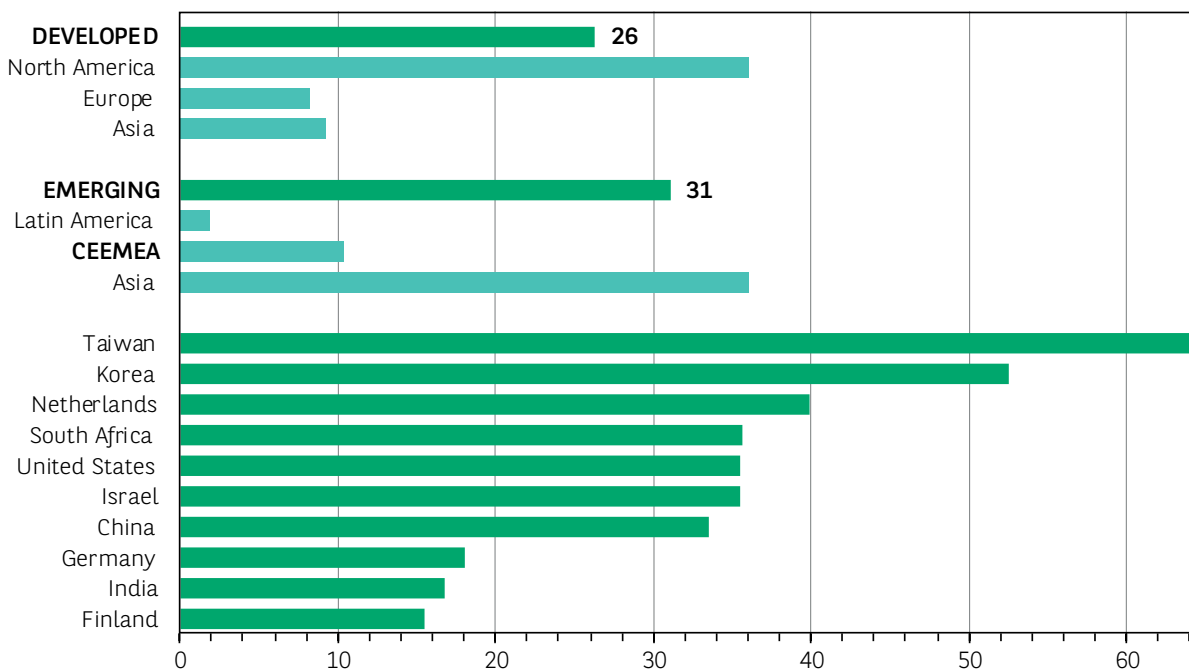
Data as at 19 July 2020. Oil importers are Chile, China, Czech Republic, Greece, Hungary, India, Indonesia, South Korea, Pakistan, Peru, Philippines, Poland, South Africa, Taiwan, Thailand and Turkey. Oil exporters are Argentina, Brazil, Colombia, Egypt, Malaysia, Mexico, Qatar, Russia, Saudi Arabia, and UAE. Source: CIA The World Factbook, BNP Paribas Asset Management.

Dollar appreciation will hinder those companies with significant hard currency borrowings, while exporters gain little from cheaper currencies given the disruption to global trade and supply chains due to the coronavirus. Another big source of revenue for many emerging markets, tourism, will be slow to return to pre-crisis levels. Remittances from abroad for expatriate citizens have fallen sharply as it is exactly these workers that are often hardest hit by restrictions in business activity.

The outperformance of China (see Figure 16), despite being the first country to be hit by the virus, highlights a key advantage the country has relative to other emerging markets. The ability of the government to support the economy through sizeable increases in infrastructure spending, and the central bank's ability to cut policy rates (without having to resort to QE), is unmatched by other countries. Reflecting this advantage, the renminbi has fallen only modestly against the US dollar, and by far less than most other emerging market currencies.

The Chinese equity market has a high share of technology companies that stand to benefit over the long term from post-coronavirus trends. However, parts of the economy are likely to suffer as the pandemic causes globalisation to be cut back as foreign companies relocate production closer to home. Fortunately, the size and growth of the domestic market means the country should be able to adapt more easily than smaller, trade-dependent economies.

Figure 16: Share of broad tech in equity index



Data as at 5 May 2020. Note: Broad tech includes information technology, internet retail, movies & entertainment, and interactive media industries. Source: MSCI, BNP Paribas Asset Management

Equity markets face near-term risks, but valuations outside of technology are broadly reasonable, with markets in some countries seemingly good value and some sectors with higher multiples able to offer even better long-term growth potential than before the crisis.

SECTION II

THE OUTLOOK FOR RETURNS

The COVID-19 coronavirus will have a lasting impact on societies and markets. As we have already described, debt levels will be higher, perhaps permanently, and growth will be slower, at least in the medium term. But what will this mean for the longer-term returns on bonds, equities and other assets?

Getting your crystal ball out in these extraordinary times to make return predictions is a brave – some may say reckless – thing to do. One certainty we have is that the uncertainty surrounding these predictions is greater than during more normal times. And yet this is exactly what we are going to do!

Why? Our predictions are based on valuation models that can give insights into which assets were dislocated the most during the COVID-19-triggered sell-off. This information can be helpful for investors who want to position themselves for a recovery.

Clearly, the underlying assumption of our valuation models is that a recovery will come. For this to materialise, at least two things need to happen.

- Firstly, countries will need to contain the virus over the coming months. This doesn't have to mean that COVID-19 is beaten; it is already sufficient that countries learn to minimise its economic impact.
- Secondly, aggressive monetary and fiscal policy is necessary to prevent the global recession from turning into a depression.

At the moment, countries across the globe are doing their best to meet these conditions. It is clearly too early to know how successful they will be.

As we discussed in the previous section, some of the effects of the pandemic are already quite obvious. For example, technology companies are expected to be well positioned for the post COVID-19 era. Its precise impact is, however, hard to predict and even harder to quantify. The predictions of our valuation model are broad-brush, with a regional focus on, for example, US equity or euro government bonds, and ignoring details such as the fate of the underlying US equity sectors.

GOVERNMENT BONDS

In the recovery phase, we only expect modest economic growth. With the central banks' accommodative stance here to stay for longer, we expect a continuation of the looser relationship between economic growth and defaults as less innovative companies can stay afloat with the help of suppressed interest rates. Consequently, the process of creative destruction, where unprofitable companies go bust to make room for new more profitable companies, is held back. As a result, economies may come to lack the necessary impulse for higher long-term growth.

Additionally, we expect loose monetary policy to lead to only modestly higher government bond yields in the next five to seven years. Table 1 details the actual and expected yield of 10-year government bonds, showing that 10-year yields are expected to rise over the forecast period by around 0.9% for the eurozone and UK; around 1.1% for core euro; and around 0.7% for the US.

Table 1: Yield rise predicted over the next five to seven years
(in percentage)

	EURO	CORE EURO	UK	US
Current 10-year yield	0.1	-0.5	0.2	0.7
Expected 10-year yield in 5-7 years	1.0	0.6	1.2	1.4
Predicted change in 10-year yield	0.9	1.1	1.0	0.7

Source: BNP Paribas Asset Management, as of 30 June 2020

Table 2 shows the expected returns of government bonds and cash derived from the model. The expected return of US cash and government bonds in particular is affected massively by the COVID-19 crisis. The Fed's aggressively loose monetary stance in response to the crisis has pushed the US government yield curve down dramatically. This, together with only a modest predicted change in rates, leads to expected returns that are much more comparable to those of the eurozone than before the crisis. In other words, COVID-19 has led to more convergence in yields and expected returns.

A related effect is that it has become much cheaper for eurozone investors to hedge US dollar risk. The expected return of UK bonds stands out at -0.75%, while it has the same starting yield and expected yield rise as that of eurozone bonds. The difference is explained by a greater sensitivity to rising rates: i.e. with a duration of around 13.5 years versus 6-8 years for the other regions, UK government bonds have a greater interest-rate sensitivity.

Table 2: Average expected local currency returns for cash and government bonds over the next five to seven years
(in percentage)

CASH - EURO	-0.25
CASH - UK	0.00
CASH - USD	0.25
BONDS - EURO GOVT.	-0.25
BONDS - EURO GOVT. CORE	-1.00
BONDS - UK GOVT.	-0.75
BONDS - US GOVT.	0.50

Source: BNP Paribas Asset Management, as of 30 June 2020

LONGER-TERM RETURN PREDICTIONS

Credit and high-yield bonds

Current and target spreads and the probabilities of rating migrations play a key role in determining the returns of corporate credit in our model. Figure 17 shows that current spreads on corporate bonds are elevated compared with long-term median spreads. Corporate bonds will benefit if spreads contract to median levels over the coming year.

For corporate bonds, we believe a focus on default probabilities is too narrow. Especially for investment-grade corporate bonds, a rating downgrade is a bigger risk, in our view. Investors often refer to this as the risk of an issuer becoming a 'fallen angel'. To take this into account, we include Moody's long-term and forecast rating migration matrices in our model. Based on in-house research, we have slightly modified elements of this matrix so that it better reflects the risk of current market conditions for lower-quality bonds.

To ensure consistency, the corporate bond model builds on the government bond model, i.e. it explicitly models the spread curve (per rating bucket) on top of the relevant government bond model. Thus, the core eurozone government bond yield curve is the basis for the eurozone credit curve.

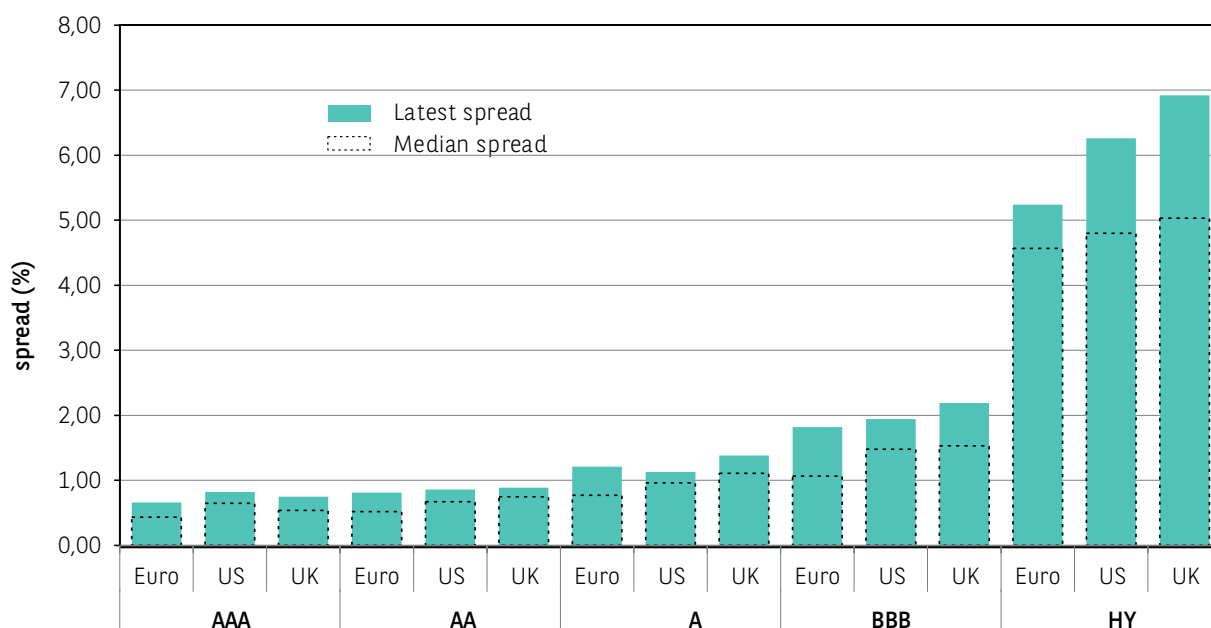
As with the government bond yield model, we take a two-step approach:

- We model the credit curve (broken down into a government bond yield and risk premia curve)
- We model a particular index as a collection of (weighted) points on the credit yield curve (i.e. we model an index as a cash-flow pattern).

Decoupling the modelling of the credit curve from that of the target index allows for greater flexibility in considering non-standard/highly-customised indices with, for example, longer or shorter duration, or lower or higher average credit quality.

Figure 17: Median and latest credit risk premia for various credit ratings and regions

based on the Bloomberg Barclays Aggregate corporate bond indices



Source: BNP Paribas Asset Management, as of 30 June 2020

Table 3 shows the expected returns for the standard Bloomberg Barclays Aggregate corporate bond indices in local currencies and in both absolute and relative terms (excess over local cash). The differences in absolute returns are partly driven by differences in the underlying government bond yield curves. In excess return (and hedged return) terms, we do have a marginal preference for UK and US over eurozone investment-grade credit. This is driven by slightly higher yields (for the relevant maturities) of the underlying government bonds (remember credit is modelled as a spread over government bonds).

Table 3: Average expected local currency total and excess returns over local cash for the next five to seven years
(in percentage)

	EXPECTED TOTAL RETURN	EXCESS OVER LOCAL CASH
Bonds - euro credit IG	0.50	0.75
Bonds - euro credit HY	2.75	3.00
Bonds - UK credit IG	1.00	1.00
Bonds - UK credit HY	4.50	4.50
Bonds - US credit IG	1.25	1.00
Bonds - US credit HY	4.25	4.00

Source: BNP Paribas Asset Management, Bloomberg, as of 30 June 2020

Additionally, for high-yield corporate bonds, we have a regional preference for the UK and the US over the eurozone. US high yield has a slightly lower rating quality and is therefore more sensitive to a heightened default risk in the current environment at the same higher US spreads compensate for this greater sensitivity.

Table 4 illustrates this point. For example, in the US, the number of lowest, C, graded high-yield bonds is around double that of the UK. This makes the segment more sensitive to the risk of higher interest rates in the current environment. While the Fed is also buying high-yield bond Exchange Traded Funds (ETFs), we think this will not fully mitigate the risk difference.

Table 4: Breakdown of high-yield credit ratings for the Bloomberg Barclays Aggregate corporate indices (in percentage)

	EURO	UK	US
BB	61.7%	54.4%	47.7%
B	29.7%	38.1%	38.8%
C	8.6%	7.5%	13.5%

Source: BNP Paribas Asset Management, Bloomberg, as of 30 June 2020

Equity returns

To predict the expected return from equity markets, the model looks at the cyclically adjusted price/earnings ratio, also known as the Shiller P/E. The cyclically-adjusted price-to-earnings (CAPE) divides the current real price of a broad market index by a 10-year average of its inflation-adjusted earnings. A higher (lower) than average CAPE provides a good indication of the market being relatively expensive (cheap). It typically takes time for dislocations in equity prices to normalise, so statistical models (such as ours) that use the CAPE are particularly effective for investment horizons of 3-10 years.

Expected returns for most developed world equity markets have remained low, but relatively stable, since mid-2017 as the price/earnings ratio has been relatively stable, although high. The 2018 cut in US corporate taxes was partly responsible for US markets (and consequently the CAPE) rising by the most among the major markets. This made the US market one of the more expensive markets in terms of the CAPE metric. However, after the recent market correction, CAPEs have dropped across all regions (see Figure 13, page 22).

For the US, we forecast an annual excess return of 4.25%. Given an expected return on US cash of 0.25% (see Table 2), the expected US total local currency return rises to 4.5%. For European equities, we expect a total return of 4.25%. With an estimate average cash return of around -0.25% (see Table 2), we expect a marginally more favorable excess return over cash for European equities. Table 5 shows expected equity returns in local

currencies.

Table 5: Total expected equity returns in local currencies
(in percentage)

EQUITIES IN LOCAL CURRENCIES	EXPECTED TOTAL RETURN
Equities - US	4.50
Equities - Europe	4.25
Equities - Japan	4.75
Equities - Pacific Ex. Japan	4.25
Equities Global Emerging	4.75

Source: BNP Paribas Asset Management, Bloomberg, as of 30 June 2020

Among developed equity markets, Japan stand out in terms of a currently low CAPE. CAPEs for Japan have been volatile and elevated. Consequently, a naïve approach may assert that Japanese equities are extremely cheap both historically and based on current CAPEs.

Our model does not simply look at the historical CAPEs; instead, among other things, it helps us assess the CAPE in risk-adjusted terms. Therefore, it predicts long-term CAPEs that are more on a par with those in the US, making Japanese equities still cheap, but not as cheap as in a more naïve approach.

TO HEDGE OR NOT HEDGE CURRENCY EXPOSURE?

As a rule of thumb, we argue that an investor should hedge the currency risk of their fixed-income investments as it could otherwise dominate the volatility of their fixed-income exposure. As a proxy for the hedging cost, we take the difference between the cash rate of the foreign and the domestic currency: e.g. US and euro cash returns. This results in a hedging cost of 0.50%, which is considerably less than before the COVID-19 crisis. At the same time, expected return on US Government bonds have fallen to 0.5%. In other words, in hedge return terms, the expected return on US government bonds is 0.25% higher than that on euro government bonds (0% versus -0.25%, see Table 2, page 27 for details on expected cash rates).

Another facet in determining whether one should hedge one's foreign currency exposure is the return we can expect on this exposure. The point is to determine the extent to which currencies are overvalued or undervalued, using a relative purchasing power parity approach. We assume that if prices in country A rise relative to those in country B, country A's nominal exchange rate would depreciate (i.e. a rise in the number of units

of currency A necessary to buy one unit of currency B).

Table 6 gives the expected return from a euro investor's point of view. In terms of relative purchasing power parity, the US and Australian dollars (USD and AUD) are relatively overvalued versus the euro, and the Japanese yen (JPY) is undervalued. Taking into account valuation, hedging cost and the extent to which hedging can reduce portfolio risk, we would at the moment typically advise investors to hedge the currency exposure of most currencies, with the JPY being a notable exception.

Table 6: Average annual expected currency returns over the next five to seven years for a euro-based investor

	USD	EUR	GBP	JPY	CHF	CAD	AUD
Expected return	-2.5%	n/a	-0.2%	1.9%	-1.7%	0.0%	-1.3%

Source: BNP Paribas Asset Management, Bloomberg, as of 30 June 2020

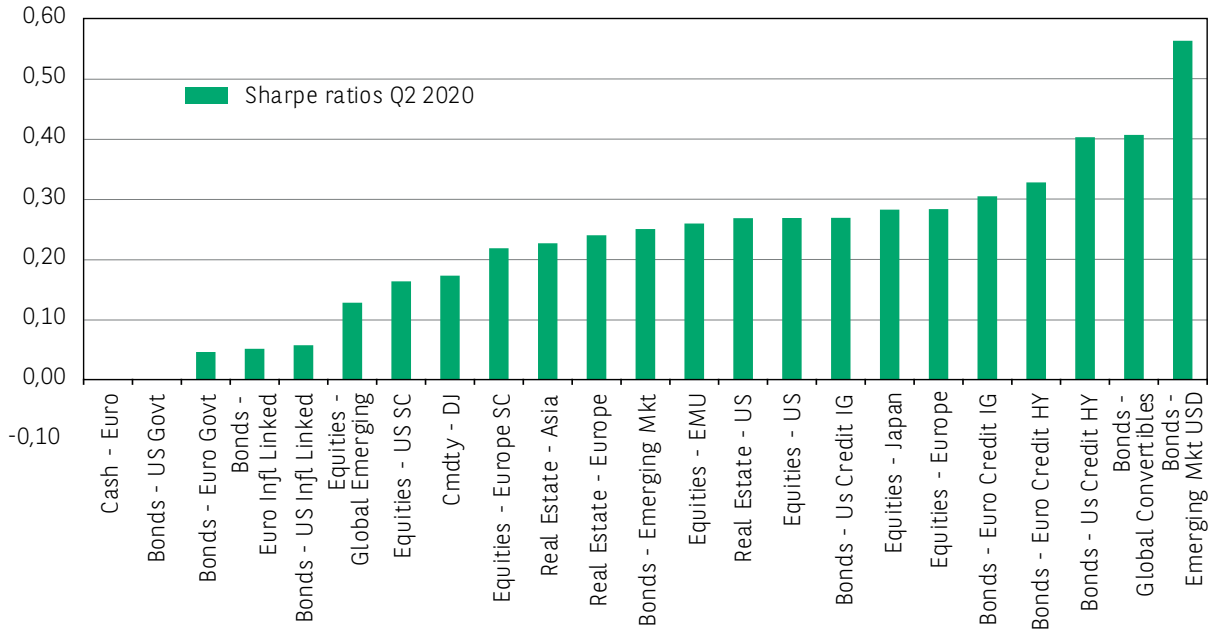
Portfolio context

Having so far focused exclusively on asset returns, the degree of risk is clearly also an important aspect of an asset's attractiveness. Figure 18 shows the risk-adjusted returns of various asset classes by looking at the Sharpe ratios, where we use euro cash as the risk-free rate, taking the perspective of a euro-based investor. We also assume that, except for exposure to emerging market debt in local currencies and equity, all currency exposure is hedged and we explicitly incorporate hedging costs.

Figure 18 illustrates our overall relatively modest outlook, with Sharpe ratios only exceeding 0.5 for a handful of assets. However, we are comparatively positive on high-risk credit assets (emerging market hard currency, euro and US high yield) plus convertibles, a hybrid between equity and spread risk.

Within the more core assets, we are relatively more positive on equity and credit over government bonds. With government bonds, we are more positive on inflation-linked bonds than nominal bonds. Finally, we are most negative on the risk-adjusted return of Euro government bonds.

Figure 18: Sharpe ratios for a euro-based investor
(hedging the currency returns*)



* Except emerging market debt in local currency and emerging equity. Source: BNP Paribas Asset Management, as of 30 June 2020

RISK AND RETURN EXPECTATIONS FOR A BROAD SUB-SET

Our model covers a broad range of assets. To illustrate this, Table 7 lists the expected risk and return (in local currencies) for a large sub-set of the assets covered. Additionally, Table 8 depicts the correlation between asset classes.

The volatility and correlations of the assets shown are obtained simultaneously by directly estimating the covariance matrix of returns across asset classes. The available history can differ widely, so we chose an approach that can deal with this. Based on the matrix, we can obtain the standard deviation by taking the square root of the diagonal elements and the bivariate correlations by taking the off-diagonal elements divided by the corresponding standard deviations.

Estimated covariance matrices are seldom stable over time. We take this into account. Specifically, we weight more recent observations more heavily than observations in the distant past. Weights fall exponentially over time using this approach.

Table 7: Annualised expected risk and return in local currencies*

	RETURN (IN %)	RISK
Cash		
Cash - UK	0	2.2
Cash - euro	-0.25	2.8
Cash - USD	0.25	1.3
Fixed Income		
Bonds - euro govt	-0.25	4.0
Bonds - euro govt core	-1	4.4
Bonds - UK govt	-0.75	6.5
Bonds - US govt	0.5	4.9
Bonds - euro infl linked	0	5.5
Bonds - US infl linked	0.5	4.4
Bonds - UK credit IG	1	6.6
Bonds - UK credit HY	4.5	11.7
Bonds - euro credit IG	0.5	4.6
Bonds - euro credit HY	2.75	10.6
Bonds - euro leveraged loans	2.75	8.9
Bonds - US credit IG	1.25	5.8
Bonds - US credit HY	4.25	9.9
Bonds - emerging markets USD	6	10.2
Bonds - emerging markets	5.75	12.2
Equity		
Equities - US	4.5	15.7
Equities - US sc	5	21.6
Equities - europe	4.25	15.8
Equities - EMU	4.75	18.6
Equities - Japan	4.75	18.9
Equities - Pacific ex Japan	4.25	16.0
Equities - global emerging	4.75	20.8
Equities - World	4.25	15.2
Alternatives		
Real estate - europe	5	19.4
Real estate - US	6.5	20.4
Real estate - Asia	5	18.9
Bonds - global convertible	3.25	8.6
Commodity	5.25	20.7

* Except emerging market debt in local currency and emerging equity, which are denominated in USD.
Source: BNP Paribas Asset Management, as of 30 June 2020

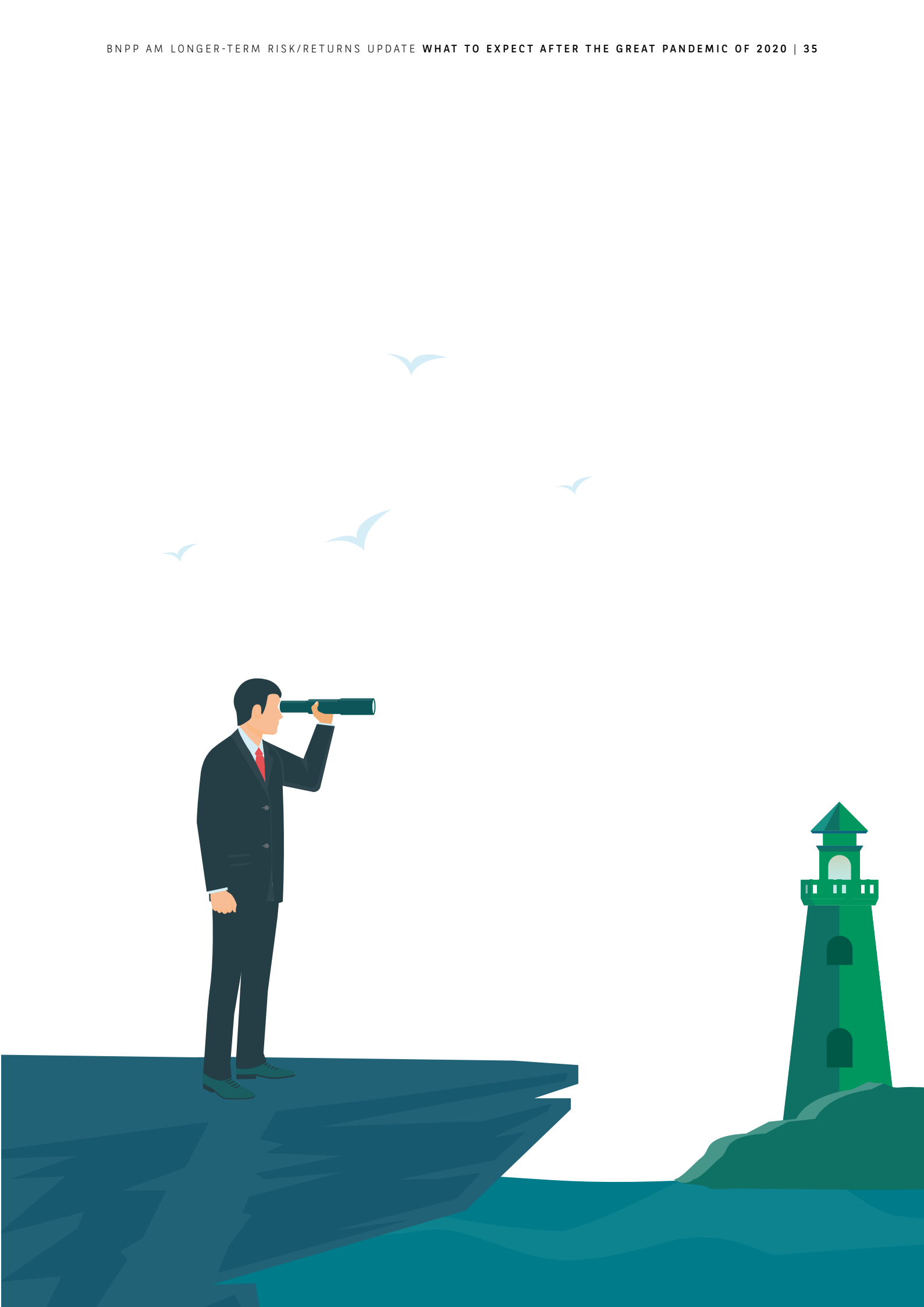


Table 8: Expected correlations

CORRELATION MATRIX	CASH - UK	CASH - EURO	CASH - USD	BONDS - EURO GOVT	BONDS - EURO GOVT CORE	BONDS - UK GOVT	BONDS - US GOVT	BONDS - EURO INFL LINKED	BONDS - US INFL LINKED	BONDS - UK CREDIT IG	BONDS - UK CREDIT HY	BONDS - EURO CREDIT IG	BONDS - EURO CREDIT HY	BONDS - EURO LEVERAGED LOANS
Cash - UK	1.0													
Cash - Euro	1.0	1.0												
Cash - USD	0.9	0.9	1.0											
Bonds - Euro govt	0.3	0.3	0.3	1.0										
Bonds - Euro govt core	0.3	0.3	0.3	0.9	1.0									
Bonds - UK govt	-0.1	-0.1	-0.1	0.5	0.6	1.0								
Bonds - US govt	0.3	0.2	0.3	0.5	0.6	0.8	1.0							
Bonds - Euro infl linked	0.2	0.2	0.2	0.7	0.6	0.1	-0.1	1.0						
Bonds - US infl linked	0.2	0.2	0.2	0.4	0.5	0.5	0.5	0.4	1.0					
Bonds - UK credit IG	0.0	0.0	-0.1	0.5	0.5	0.4	0.0	0.7	0.4	1.0				
Bonds - UK credit HY	0.1	0.1	0.0	0.2	0.1	-0.3	-0.4	0.6	0.2	0.6	1.0			
Bonds - Euro credit IG	0.1	0.2	0.1	0.6	0.5	0.0	-0.1	0.9	0.4	0.8	0.8	1.0		
Bonds - Euro credit HY	0.0	0.0	0.0	0.2	0.0	-0.3	-0.5	0.6	0.2	0.7	0.9	0.8	1.0	
Bonds - Euro leveraged loans	0.1	0.1	0.0	0.1	0.0	-0.4	-0.6	0.6	0.1	0.6	0.8	0.7	0.9	1.0
Bonds - US credit IG	0.2	0.2	0.2	0.6	0.5	0.3	0.3	0.7	0.7	0.8	0.6	0.8	0.6	0.5
Bonds - US credit HY	0.0	0.2	0.1	0.2	0.1	-0.2	-0.4	0.6	0.3	0.7	0.9	0.8	1.0	0.9
Bonds - emerging markets USD	0.2	0.2	0.2	0.4	0.3	0.0	-0.2	0.7	0.5	0.7	0.8	0.9	0.8	0.8
Bonds - emerging markets	0.2	0.2	0.2	0.2	0.1	-0.1	-0.2	0.6	0.4	0.6	0.7	0.7	0.7	0.6
Equities - US	0.0	0.0	-0.1	0.0	-0.2	-0.3	-0.5	0.4	0.1	0.5	0.7	0.6	0.8	0.7
Equities - US sc	0.1	0.1	0.1	0.0	-0.1	-0.4	-0.6	0.5	0.0	0.5	0.7	0.6	0.8	0.8
Equities - Europe	0.2	0.2	0.1	0.1	0.0	-0.3	-0.5	0.6	0.1	0.6	0.8	0.7	0.8	0.8
Equities - EMU	0.0	0.0	0.0	-0.2	-0.3	-0.5	-0.6	0.3	-0.2	0.3	0.5	0.4	0.6	0.6
Equities - Japan	0.2	0.2	0.2	0.2	0.1	-0.3	-0.4	0.6	0.2	0.6	0.8	0.7	0.8	0.8
Equities - Pacific ex Japan	0.2	0.2	0.2	0.0	-0.1	-0.3	-0.4	0.5	0.3	0.5	0.8	0.6	0.8	0.7
Equities - global emerging	0.1	0.1	0.1	0.1	0.0	-0.4	-0.5	0.6	0.0	0.6	0.8	0.7	0.8	0.8
Equities - World	0.0	0.0	0.0	0.0	-0.1	-0.4	-0.6	0.5	0.1	0.6	0.7	0.6	0.8	0.8
Real estate - Europe	0.1	0.1	0.0	0.2	0.1	-0.2	-0.4	0.6	0.1	0.6	0.8	0.7	0.8	0.8
Real estate - US	0.1	0.1	0.1	0.3	0.3	-0.1	-0.3	0.6	0.2	0.7	0.8	0.8	0.8	0.8
Real estate - Asia	0.1	0.1	0.0	0.1	0.0	-0.3	-0.5	0.5	0.0	0.5	0.7	0.6	0.7	0.7
Bonds - global convertible	0.0	0.1	0.0	0.0	-0.1	-0.3	-0.4	0.5	0.2	0.6	0.7	0.6	0.8	0.8
Commodity	0.2	0.2	0.2	0.0	0.0	-0.3	-0.4	0.5	0.3	0.4	0.6	0.5	0.7	0.7

Source: BNP Paribas Asset Management, as of 30 June 2020

BONDS - US CREDIT IG	BONDS - US CREDIT HY	BONDS - EMERGING MARKETS USD	BONDS - EMERGING MARKETS	EQUITIES - US	EQUITIES - US SC	EQUITIES - EUROPE	EQUITIES - EMU	EQUITIES - JAPAN	EQUITIES - PACIFIC EX JAPAN	EQUITIES - GLOBAL EMERGING	EQUITIES - WORLD	REAL ESTATE - EUROPE	REAL ESTATE - US	REAL ESTATE - ASIA	BONDS - GLOBAL CONVERTIBLE	COMMODITY
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1.0																
0.7	1.0															
0.8	0.8	1.0														
0.6	0.7	0.8	1.0													
0.5	0.8	0.6	0.6	1.0												
0.4	0.8	0.6	0.5	0.9	1.0											
0.5	0.8	0.7	0.6	0.9	0.9	1.0										
0.1	0.5	0.3	0.3	0.8	0.8	0.7	1.0									
0.5	0.8	0.8	0.6	0.8	0.8	0.9	0.6	1.0								
0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.6	0.9	1.0							
0.5	0.8	0.7	0.6	0.9	0.9	1.0	0.7	0.9	0.8	1.0						
0.5	0.8	0.6	0.6	1.0	0.9	0.9	0.8	0.9	0.8	0.9	1.0					
0.5	0.7	0.7	0.5	0.7	0.8	0.8	0.6	0.8	0.6	0.8	0.7	1.0				
0.6	0.8	0.7	0.5	0.7	0.8	0.8	0.5	0.8	0.6	0.7	0.7	0.9	1.0			
0.4	0.7	0.6	0.6	0.7	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.7	0.7	1.0		
0.6	0.8	0.7	0.6	0.9	0.8	0.8	0.7	0.8	0.8	0.9	0.9	0.7	0.6	0.6	1.0	
0.4	0.8	0.6	0.6	0.6	0.7	0.7	0.5	0.7	0.7	0.6	0.7	0.6	0.6	0.6	0.6	1.0

CONCLUSION

The COVID-19 crisis will doubtless have a lasting impact on societies and markets. Debt levels will be higher, perhaps permanently, and growth will be slower, at least in the medium term. In contrast to previous periods when high debt burdens were reduced either through inflation or default, many central banks are instead simply taking assets onto their balance sheets. With inflation quiescent, the main consequence will be interest rates remaining even lower for longer than investors had previously imagined.

In excess return (and hedged return) terms, we marginally prefer UK and US investment-grade corporate bonds over eurozone credit.

Additionally, we have a regional preference for UK and US high-yield credit over the eurozone. US high-yield has a slightly lower rating quality and is therefore more sensitive to a heightened default risk in the current environment at the same higher US spreads compensate for this greater sensitivity.

Expected total returns for US and European equities are forecast to be 4.5% and 4.25% in local currency.

Taking into account valuation, hedging cost, but also the extent to which hedging can reduce portfolio risk, we advise investors to hedge the exposure to most currencies, with the JPY being a notable exception.

Once the crisis has passed, the hunt for yield will return. Investors will again be forced to seek out equities, lower-rated investment-grade debt and emerging market bonds to meet their return targets, with all the risk that entails.



- Koye Somefun -

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Koye is Head of Multi-Asset & Solutions team in the Quant Research Group at BNP Paribas Asset Management. In this role, he oversees a team that designs and develops customised retirement solutions for fiduciary management and LDI clients. He is also responsible for determining long-term asset allocation views and strategic benchmarks that the Multi-Asset, Quantitative & Solutions (MAQS) team uses for both mutual funds and dedicated client portfolios. Koye joined our company in 2007 and is based in Amsterdam.

Koye joined Fortis Investments, a predecessor of BNP Paribas Asset Management, as a Quantitative Analyst for strategic asset allocation in the Amsterdam office. From 2010 to 2014, he was Head of Quantitative Alpha Generation for the Multi Asset Solutions team in London. Prior to joining us, Koye was a Quantitative Analyst for structured products at IRIS. He also worked for the Dutch National Institute for Mathematics and Computer Science as a Researcher, publishing several articles on automated trading strategies. Koye began his investment career in 1998 with ORTEC as a Consultant.

Koye has 20 years of investment experience. He holds a PhD in Computational Economics and a Master's degree in Applied Mathematics from the University of Notre Dame in the US. He completed his undergraduate studies at the Erasmus University in Rotterdam in the Netherlands. In 2007, he obtained the Certificate in Quantitative Finance (CQF) in London.



- Daniel Morris -

Senior Investment Strategist

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Daniel is a Senior Investment Strategist at BNP Paribas Asset Management. In this role, he has responsibility for promoting collaboration between investment teams and formulating alpha-generating investment views across asset classes. Daniel's wide-ranging experience encompasses advising clients and providing investment recommendations, as well as offering a strategic perspective to senior management and portfolio managers. He joined our company in 2015 and is based in London.

Prior to joining us, Daniel was Managing Director, Global Investment Strategist at TIAACREF, where he was responsible for advising clients and portfolio managers on investment strategy and asset allocation. Prior to that, Daniel had been Global Market Strategist at JPMorgan Asset Management, Senior Equity Strategist at Lombard Street Research, and US Equity Strategist at Bank of America Securities.

Daniel has 23 years of investment experience. He holds a BA in Mathematics from Pomona College, an MA in International Economics and Latin American Studies from Johns Hopkins University, as well as an MBA from The Wharton School of the University of Pennsylvania. Daniel is a CFA Charterholder.

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Some emerging markets offer less security than the majority of international developed markets. For this reason, services for portfolio transactions, liquidation and conservation on behalf of funds invested in emerging markets may carry greater risk.



July 2020 - Design: Creative Services BNPP-AM - P2006002



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