Foresight

30-year return forecasts (2022–51): Part 2

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Schroders

Contents

Irene Lauro
Economist
(44-20) 7658 4962

Tina Fong, CFA
Strategist
(44-20) 7658 3278

Long-run asset class performance: 30-year return forecasts (2022–51)

Summary

Equities still deliver stronger returns compared to bonds and the risk premium has increased

Schroders Economics Group produces thirty-year return forecasts on an annual basis, which incorporate the impact of climate change. In this paper, we outline the methodology used to forecast returns for a range of asset classes. This is based on a series of building blocks and estimates of risk premia. Meanwhile, our central case for climate change remains the partial mitigation scenario where there is some action taken to reduce carbon emissions (further detail can be found in Part 1 of the paper).

In terms of our return forecasts compared to last year, there was a marginal rise in our cash returns for the developed markets. This was driven by a slight upward adjustments to our central bank policy rate forecasts for these economies. In the near-term, inflation is expected to be higher while central banks are assumed to normalise monetary policy faster. But over the next 30 years, inflation and real interest rates are little different on average compared to last year's estimates.

Given our cash return forecasts, we have slightly higher long run return forecasts for the US and European sovereign and credit bond markets. For instance, our US sovereign and credit bond forecasts are higher primarily because of the increase in the real rate assumptions but the impact from climate change on productivity continues to weigh on returns.

Our global equity return forecast has edged higher this year thanks to emerging markets while expected returns for the developed region has remained stable. In particular, US nominal equity returns are unchanged as the fall in the dividend yield has been offset by marginal increases in inflation and dividend growth. In comparison, there have been upgrades in returns forecasts for emerging market countries such as China, South Korea and India. For China and South Korea, the increase in return forecasts were mainly driven by higher dividend yields. In addition, the reduction in stranded assets was behind the upgrade to returns in India.

Overall, accounting for climate change, equities are still expected to outperform other asset classes over the next 30 years. On a regional basis, emerging equities are expected to outperform most developed equity markets. Meanwhile, our forecasts suggest that credit and property will still deliver better returns than sovereign bonds. Furthermore, the return gap between sovereign bonds and equities has widened a bit more from 3.7% to 3.8%. So, investors will be incentivised to move up the risk curve in search of higher returns over the next 30 years and it is important to invest actively given the challenges of harvesting returns.

Throughout our analysis, we have had to make a number of assumptions. There is little agreement as yet in the literature about the quantitative impact of climate change on economic activity for a given quantity of warming. There is also debate on the costs of transition and the form mitigation efforts will take. Consequently, the variability in asset return forecasts depends on the models used and assumptions made. Nonetheless, the direction of travel is clear and these estimates provide a consistent framework for assessing the potential effects of a development which will have profound effects on the world economy and financial system.

Table 1: Long-run return assumptions based on partial mitigation scenario (2022–51)

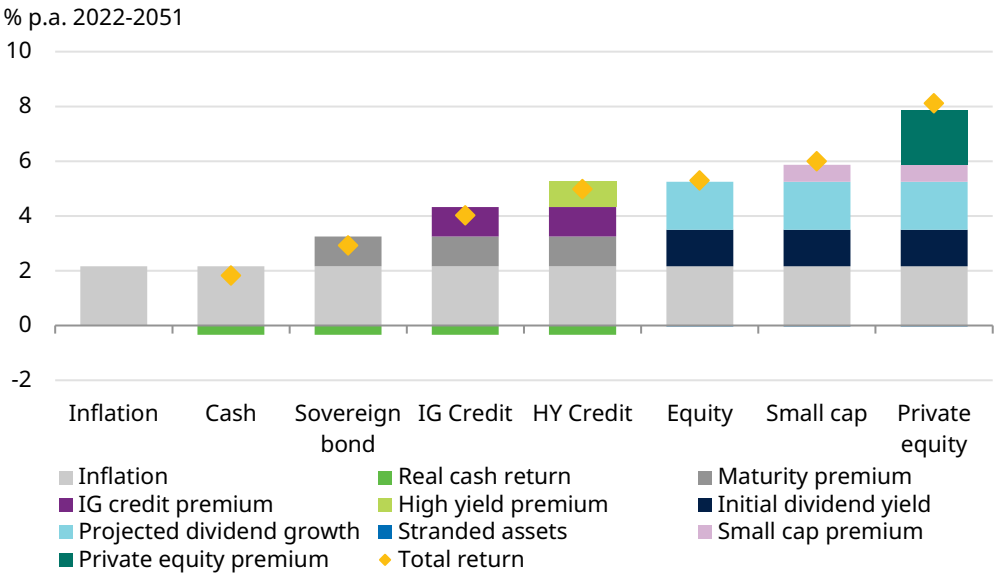
% p.a. over the next 30 years	Currency	Yield	Capital gain	Nominal return	Inflation	Real return
Cash						
$ cash	USD	1.8	N/A	**1.8**	2.2	**-0.3**
£ cash	GBP	1.4	N/A	**1.4**	1.8	**-0.3**
€ cash	EUR	1.0	N/A	**1.0**	1.8	**-0.8**
¥ cash	JPY	-0.2	N/A	**-0.2**	0.3	**-0.5**
G4 cash	Local	1.0	N/A	**1.0**	1.6	**-0.5**
Government bonds (10-year)						
US Treasury bond	USD	2.9	N/A	**2.9**	2.2	**0.7**
UK Gilt	GBP	2.1	N/A	**2.1**	1.8	**0.3**
Eurozone (Germany)	EUR	1.8	N/A	**1.8**	1.8	**0.0**
JGB	JPY	0.2	N/A	**0.2**	0.3	**-0.1**
G4 bond	Local	1.8	N/A	**1.8**	1.6	**0.2**
Credit						
US Investment Grade	USD	4.0	N/A	**4.0**	2.2	**1.8**
US High yield	USD	5.0	N/A	**5.0**	2.2	**2.8**
Euro Investment Grade	EUR	2.8	N/A	**2.8**	1.8	**1.0**
Euro High Yield	EUR	3.5	N/A	**3.5**	1.8	**1.7**
Equity markets						
US	USD	1.3	3.9	**5.3**	2.2	**3.1**
UK	GBP	3.5	3.3	**6.9**	1.8	**5.1**
Europe ex.UK	EUR	2.2	3.8	**6.0**	1.6	**4.4**
Japan	JPY	2.1	0.8	**2.9**	0.3	**2.6**
Pacific ex. Japan	Local	3.2	4.7	**8.1**	2.5	**5.4**
Emerging markets	Local	2.6	4.6	**7.4**	2.5	**4.7**
Developed markets	Local	1.7	3.6	**5.4**	1.9	**3.4**
Global	Local	1.8	3.8	**5.7**	2.0	**3.6**
Global equity vs. G4 bonds	Local			**3.8**		**3.3**

Source: Thomson Datastream, Schroders Economics Group, January 2022. Note: Returns are in local currency.

Building blocks

The foundation behind our approach in forecasting returns for a range of asset classes is shown in chart 1. We use a series of building blocks from inflation to different risk premia to formulate our final capital market assumptions. For fixed income assets, our forecasts of inflation and real cash returns are the key components with sovereign bonds incorporating a maturity premium. To forecast investment grade (IG) and high yield (HY) bonds, we add a credit risk premium. Meanwhile, the main building blocks for equities are the initial dividend yield and growth of dividends. For small caps and private equity, we incorporate additional returns for taking on small cap and private equity risks.

Chart 1: Building blocks to the US return forecasts



Source: Schroders Economics Group, January 2022.

Climate change

Working with Cambridge Econometrics, our central case for climate change remains the partial mitigation scenario where there is some action taken to reduce carbon emissions. Temperature increases are more limited thanks to the introduction of carbon emission mitigation policies. We find that productivity is broadly lower in 'hotter' countries due to temperature rises. This is especially the case for the commodity-exporter countries. Meanwhile, 'colder' countries can achieve higher productivity growth subject to the assumptions we make around transition costs. Finally, those economies that invest in low-carbon technologies will likely be rewarded with a boost to their productivity and return profile.

Chart 2 summarises the differences between the base case (also called partial mitigation scenario), the no climate change scenario and the net zero scenario. The latter is a scenario where more action is taken to reduce emissions and meet the Paris Agreement. Further detail can be found in part 1 of the paper and tables A4 and A5 in the appendix section.

Chart 2: Summary of no climate change and partial mitigation scenarios

No climate change	Partial mitigation	Net Zero
– Current policies – Physical risks are not taken into account – No transition	– Global temperature to rise by 1.6 °C by 2050 – Carbon taxes start from 2030 – Other mitigation policies introduced from 2025	– Global temperature to rise by 1.5 °C by 2050 – Carbon taxes start from 2021 – Other mitigation policies introduced from 2021

Source: Schroders Economics Group, January 2022.

Cash

Real cash returns revised slightly higher

Real interest rates

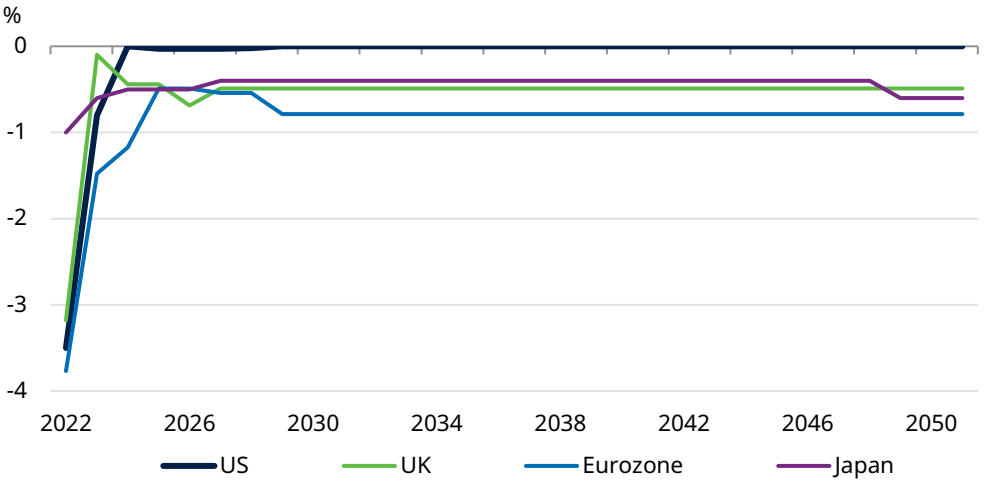
One of the key building blocks for our long-run forecast is our assumption on cash returns. This is almost entirely driven by movements in key central bank policy rates in the major developed economies (such as the Bank of England base rate, or the Federal funds rate).

Historically, we have used a multi-stage approach. In the initial stage, we forecast the real return on cash to remain negative. This is because the de-leveraging of both private and public sector balance sheets, in the developed world, keeps monetary policy extremely accommodative. Negative real rates also remain an attractive way of reducing the debt burden, which has been further increased by the economic impact of Covid-19. We have discussed this in more detail in the Inescapable Truths update: which trends have been strengthened or challenged by Covid-19?

The second stage of our cash forecast is a normalisation in cash rates, before we reach the final stage, with real cash rates at zero or lower. This terminal value of real cash returns is based on an historic average, to which we adjust to reflect our views going forward about the strength of trend growth. To arrive at our nominal cash return forecast, we combine our assumption on real cash rates with inflation expectations over the next 30 years.

Chart 3: Expected evolution of real cash rates

Policy normalisation has been bought forward



Source: Schroders Economics Group, January 2022.

Chart 3 helps to illustrate the expected evolution of real cash rates across the major developed central banks. We assume that normalisation of cash rates is to be largely complete by 2024. Overall, real cash rates in the developed world are expected to be slightly higher compared to last year's forecasts. In the near-term, central banks are

now assumed to normalise policy faster. This is because the strength of the economic recovery has led to supply chain issues and tighter labour markets, which have pushed inflation and wages higher than anticipated. But over the next 30 years, real interest rates are little different on average compared to last year's estimate.

Inflation

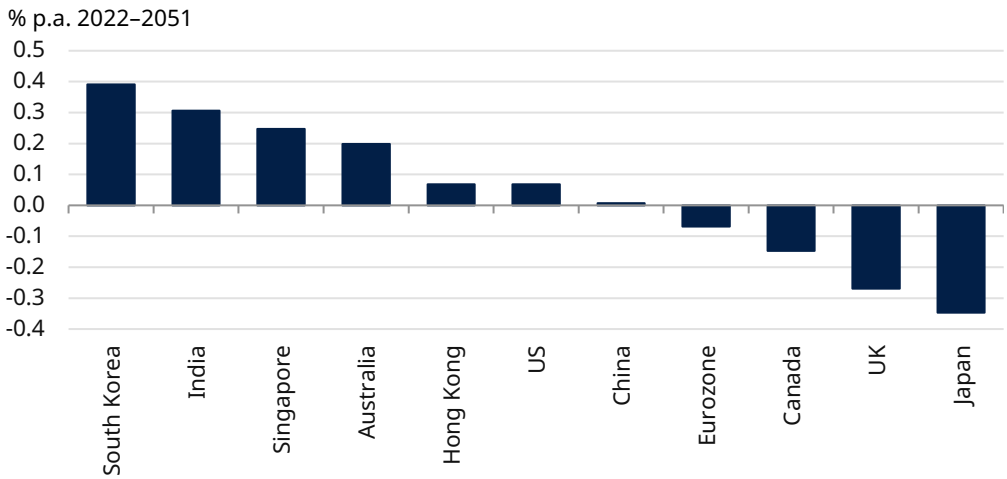
In the absence of climate change considerations, we assume that inflation among the main developed markets to be consistent with central banks' targets. With climate change, inflation is impacted by both demand and supply shocks. The initial impact is on the supply-side because higher temperatures means lower productivity. This leads to a reduction in the productive capacity of the economy compared to what it might have been in the absence of climate change, so it is inflationary. Possible channels could be the squeeze on supply chains and the higher cost of economic activity over time as carbon-based energy sources are phased out.

The demand shock is the second round effect due to lower productivity and income growth, which is deflationary. While the transition cost from carbon tax means a reduction in household incomes, this impact should be offset by the redistribution of these tax revenues to households either through a lump sum or subsidies on clean technology. Overall, Cambridge Econometrics assumes that the supply side shock on prices due to climate change will prevail.

Climate change is inflationary for some countries

In the partial mitigation scenario, we combine our no climate change inflation forecasts with adjustments from the more sophisticated climate change modelling from Cambridge Econometrics. For instance, we incorporate the impact on productivity, and in turn on inflation, from a move to clean technology. Overall, climate change will be inflationary where productivity is lower than in a no climate change scenario. This is the case for countries like South Korea, India and Singapore (chart 4). In comparison, it has a deflationary impact on the Eurozone, Japan, and UK, as they experience an improvement in productivity relative to a no climate change scenario.

Chart 4: The impact on inflation from incorporating climate change



Source: Cambridge Econometrics, Schroders Economics Group, January 2022.

Climate change and cash returns

Climate change impacts productivity...

As we discuss in Part 1 of the paper, climate change has consequences for productivity. In particular, productivity is impacted by the physical costs of higher temperatures and the transition costs of mitigation efforts taken to reduce global warming. We can assess the consequences for fixed income assets by making use of the productivity figures to modify our cash and bond returns.

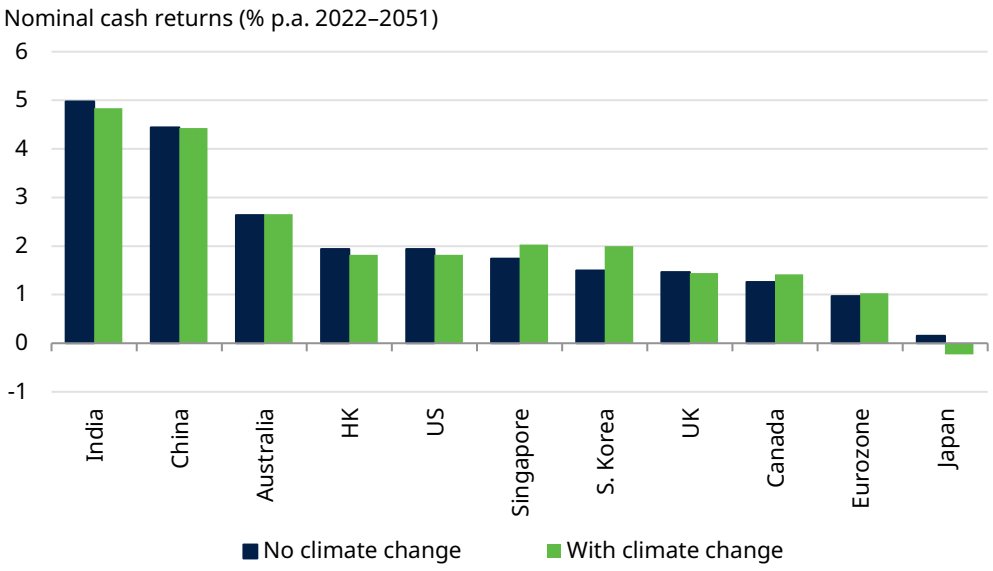
Following the framework developed by Laubach and Williams[1], long run equilibrium interest rates move in line with changes in trend growth in the economy. Assuming that the supply of labour is not affected by climate change, then changes in productivity feed directly into changes in trend growth. In turn, this directly affects the long run or equilibrium interest rate for the economy.

...where productivity is generally lower in 'hotter countries'

We find that some countries experience higher productivity based on the partial mitigation scenario. The economic growth of 'cold' countries, such as Switzerland, Canada and some eurozone countries, generally increases as annual temperatures increase. But productivity is broadly lower in 'hotter' countries due to temperature rises. That said, some of these economies such as Singapore will also have offsetting factors such as investments in clean technology. In the US, we find that productivity is lower with climate change due to the drag from both physical and transition costs.

To incorporate climate change into the nominal cash forecasts, we take the difference between productivity based on the partial mitigation scenario and no climate change scenario. This difference in productivity is then incorporated into the no climate change cash return forecast.

Chart 5: Cash return forecasts with and without climate change



Source: Cambridge Econometrics, Schroders Economics Group, January 2022.

[1]Laubach and Williams, Measuring the natural rate of interest, Review of Economics and Statistics (2003).

Table 2: Cash return forecasts with and without climate change

% p.a. over the next 30 year		Nominal return (no climate change)	Climate change impact	Nominal return (climate change)
Cash				
US	USD	**1.9**	-0.1	**1.8**
UK	GBP	**1.5**	0.0	**1.4**
Eurozone	EUR	**1.0**	0.1	**1.0**
Japan	JPY	**0.2**	-0.4	**-0.2**
Canada	CAD	**1.3**	0.2	**1.4**
Australia	AUD	**2.6**	0.0	**2.7**
Hong Kong	HKD	**1.9**	-0.1	**1.8**
Singapore	SGD	**1.7**	0.3	**2.0**
G4 cash	Local	**1.1**	-0.1	**1.0**

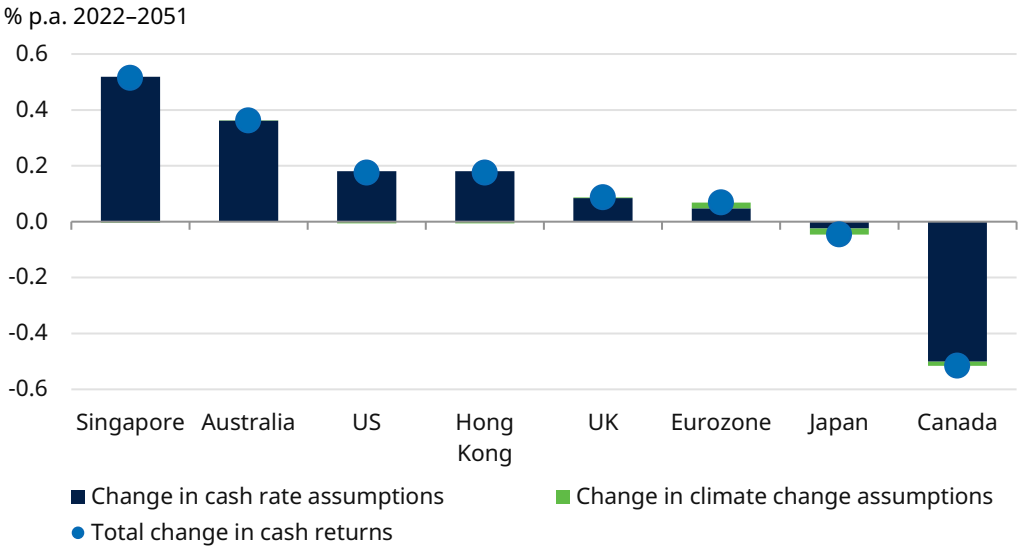
Source: Source: Cambridge Econometrics, Schroders Economics Group, January 2022.

With climate change, our cash return forecasts for developed countries such as the US and Japan are lower (chart 5). For the US, the lower cash return forecast is driven by the lower productivity assumption under climate change. For Hong Kong, the nominal cash return forecast is the same as the US given that the Hong Kong currency is pegged to the US dollar.

In comparison, cash returns are expected to be higher for countries such as Canada and Singapore. This is because these economies that invest in low-carbon technologies are rewarded with higher productivity growth (as discussed in Part 1 of the paper).

Overall, compared to last year, cash returns are higher predominately due to our real cash rate forecasts with minimal changes to our productivity assumptions with climate change (chart 6).

Chart 6: Cash return forecasts compared to last year's estimates



Source: Schroders Economics Group, January 2021.

Sovereign bonds

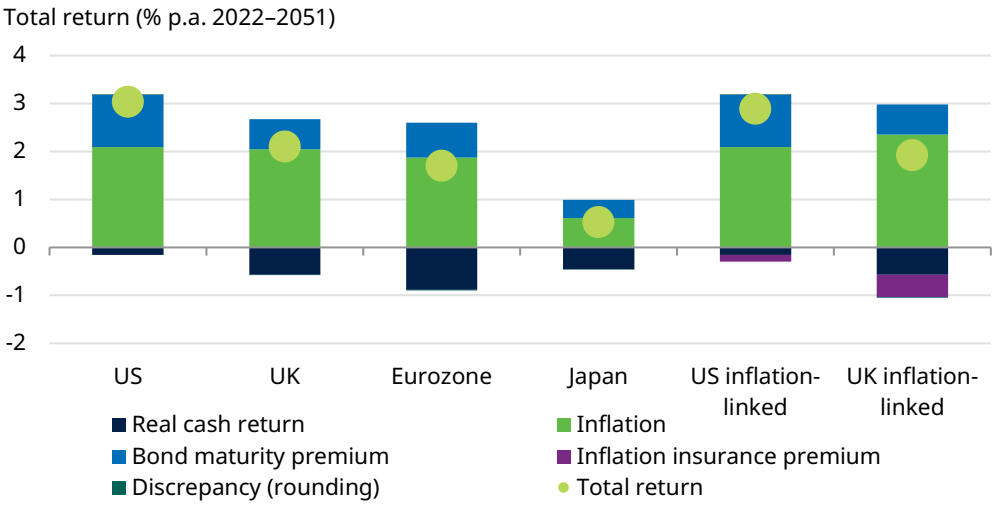
Cash upgrades in the developed markets lifts bond returns

Our return assumption for sovereign debt builds on the return we have for cash, adding a term premium to forecast the returns to longer maturity (10-year) bonds. As with our cash methodology, we estimate the maturity premium from historical averages (in this case 20 years) and make an adjustment to reflect our own views. Chart 7 provides a more detailed breakdown of the building blocks used to forecast sovereign bond return before accounting for climate change.

Using the historical average maturity is a sensible base, as there is a maximum steepness a yield curve can reach before the carry and roll becomes too attractive for investors to ignore, thus encouraging them to buy long-dated bonds and flatten the curve again. We apply a 20–40% discount to the historic steepness of the yield curve for all countries. This is to reflect the view that yield curves are likely to be flatter going forward than they have been since the early 1990s, as a result of fairly loose monetary policy, central bank asset purchases and a weaker trend growth outlook.

The UK and Eurozone see slightly smaller discounts than other markets. For instance, in the UK, following Brexit, the expected reduction in migration will limit flexibility to respond to sudden changes in demand. So, the Phillips curve (the relationship between unemployment and inflation) should steepen. This would therefore increase the chances of higher inflation, resulting in a higher term premium demanded by investors.

Chart 7: Breakdown of sovereign and inflation-linked bond return forecasts without climate change



Source: Schroders Economics Group, January 2022. Note: UK inflation linked bond returns use RPI inflation for the nominal returns.

For the UK and US, we also forecast the returns on inflation-linked government debt, by applying a discount to the returns on the nominal bonds. It is to be expected that inflation-linked bonds offer a lower return than nominal, owing to the insurance they offer against rising prices. The reason for the greater yield discount applied to UK linkers compared with US TIPS (Treasury Inflation Protected Securities) is because of technical market reasons related to the relative liquidity and structure of the two markets[2]. Note that we are assuming no difference in duration with nominal bonds.

[2]UK linkers make up a bigger share of the total gilt market (roughly 20%) than TIPS do of the Treasury market (less than 10%). Thus, relative to their main market, TIPS are less liquid than UK linkers, and thus have a price discount (e.g. lower prices, thus higher yield and smaller differential between nominal and TIPS yield).

Climate change and sovereign bond returns

Since we have not changed the methodology behind our climate change assumptions on productivity, compared to last year, the impact of climate change on cash returns has not changed significantly. The increases in sovereign bond return forecasts for the US, UK, Eurozone, Singapore and Australia are largely driven by upward revisions in our assumptions on real cash returns (chart 8). By contrast, returns for Canada bonds are lower solely due to a downgrade to our real cash rate forecast.

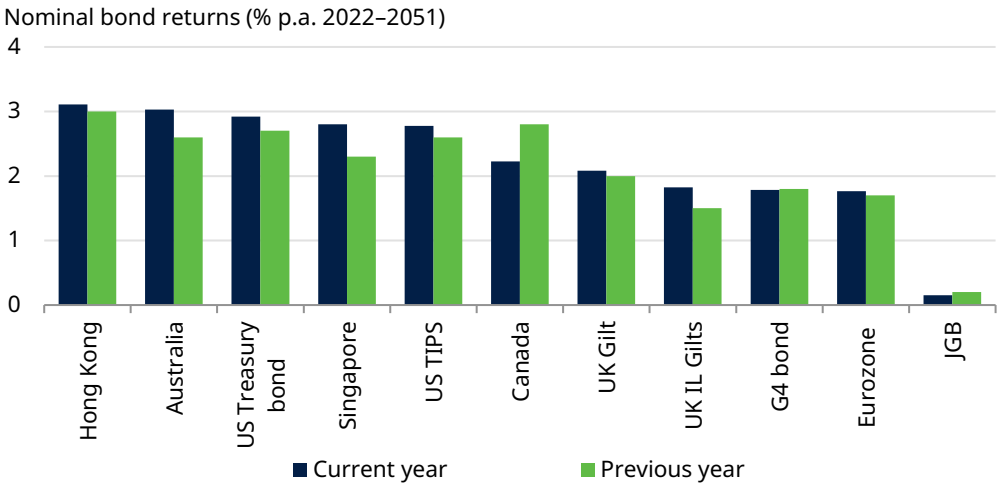
Sovereign debt should outperform cash, but returns still muted

Table 3: Sovereign and inflation-linked bond return forecasts with and without climate change

% p.a. over the next 30 years	Currency	Nominal return (no climate change)	Climate change impact	Nominal return (climate change)
US Treasury bond	USD	**3.0**	-0.1	**2.9**
UK gilt	GBP	**2.1**	0.0	**2.1**
Eurozone (Germany)	EUR	**1.7**	0.1	**1.8**
JGB	JPY	**0.5**	-0.4	**0.2**
Canada	CAD	**2.1**	0.2	**2.2**
Australia	AUD	**3.0**	0.0	**3.0**
Hong Kong	HKD	**3.2**	-0.1	**3.1**
Singapore	SGD	**2.5**	0.3	**2.8**
G4 bond	Local	**1.9**	-0.1	**1.8**
Inflation-linked (IL)				
Barclays 7–10 year IL Gilts	GBP	**1.9**	0.0	**1.9**
Barclays 7–10 year TIPS	USD	**2.9**	-0.1	**2.8**

Source: Schroders Economics Group, January 2022.

Chart 8: Sovereign and inflation-linked bond return forecasts compared to the previous year (with climate change)



Source: Schroders Economics Group, January 2022.

Credit and emerging market debt (EMD) bonds

Our credit returns are forecast using the risk premium or excess return of credit (both investment grade and high yield) over sovereign bonds for the respective market. The two key drivers of credit's excess return are the changes in spreads and the expected loss through defaults, both of which are closely linked to the economic cycle. For this reason, we combine regression analysis of spread changes and default losses with our long run US growth forecast to predict the excess return of US high yield and investment grade credit over Treasuries. Using regression analysis again, we exploit an historical relationship and use the excess returns of US credit to estimate the excess returns of UK and European credit over UK gilts and German Bunds respectively.

For investment grade credit, we also attempt to account for losses from downgrades (table 4). To forecast this for the next 30 years, we believe that the best approach is to apply an historic ratio of downgrade losses to spreads to the current forecast spread. This provides a downward adjustment to the spread to allow for the downgrade losses. As might be expected, this results in downward revisions to our forecast returns for investment grade (IG) credit this year.

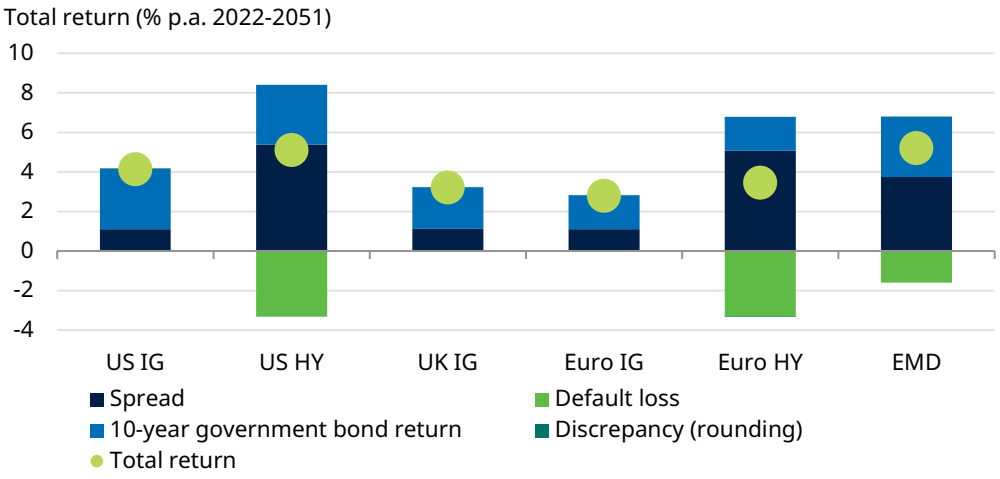
Table 4: Adjusting forecast spreads in IG credit for downgrade losses

	Downgrade loss, %	Median spread, bps	Downgrade loss/Median spread, %	Current forecast spread, bps	Loss adjusted spread, bps
US IG	-0.37	133	-0.3	153	111
EU IG	-0.33	98	-0.3	166	111
UK IG	-0.51	134	-0.4	181	112

Source: Schroders Multi Asset, January 2022.

Finally, we also estimate the relationship between US high yield (HY) and emerging market debt (EMD) spreads and use this to drive the EMD spread projection, while also assuming an historic ratio holds for EMD defaults and US HY defaults (chart 9).

Chart 9: Breakdown of credit bond return forecasts without climate change



Source: Schroders Economics Group, January 2022. Note: Returns are in local currency.

Climate change and credit bond returns

Changes to credit returns have two key drivers in our climate change work. As we have seen, cash rates are impacted quite considerably in some cases, and this has knock-on effects for government yields and credit returns. In addition, there is an impact on growth from climate change, which feeds into our forecast for default rates and spreads in credit assets.

Given that we have upgraded US, UK and Eurozone cash returns, it should not be surprising that credit returns are also expected to be higher. At the same time, credit default rates have slightly risen as the US GDP growth forecast with climate change has edged lower compared to last year. We do not make any assumptions for stranded assets, which could affect the default rates of some companies in the index.

Table 5: Credit and EMD bond return forecasts with and without climate change

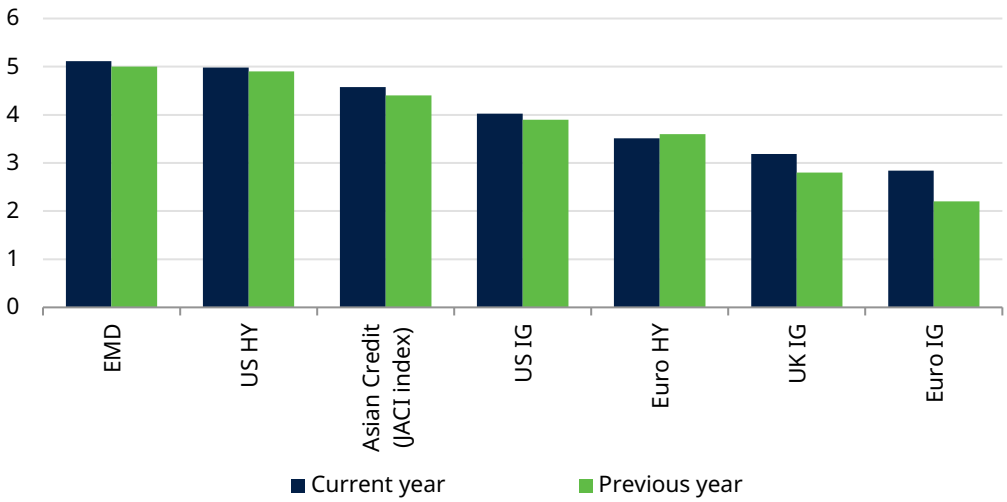
% p.a. over the next 30 years	Currency	Nominal return (no climate change)	Climate change impact	Nominal return (climate change)
Credit				
US IG	USD	**4.1**	-0.1	**4.0**
US HY	USD	**5.1**	-0.1	**5.0**
UK IG	GBP	**3.2**	0.0	**3.2**
Euro IG	EUR	**2.8**	0.1	**2.8**
Euro HY	EUR	**3.4**	0.1	**3.5**
EMD	USD	**5.2**	-0.1	**5.1**
Asian Credit (JACI Index)	USD	**4.8**	-0.2	**4.6**

Source: Schroders Economics Group, January 2022. Note: Returns are in local currency.

Credit returns increase thanks to higher cash rates

Chart 10: Credit and EMD bond return forecasts compared to the previous year (with climate change)

Nominal returns (% p.a. 2022–2051)



Source: Schroders Economics Group, January 2021. Note: Returns are in local currency.

Equities

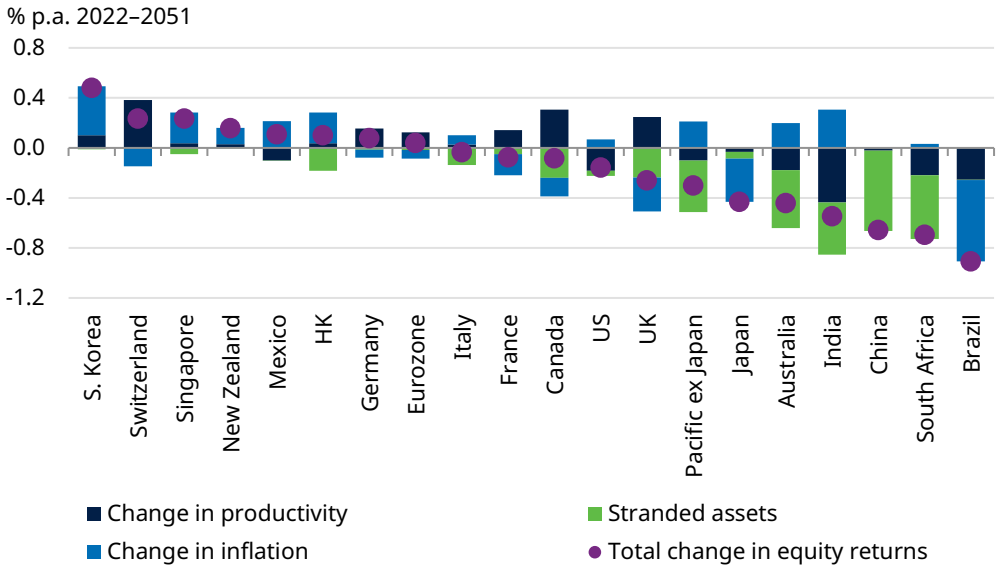
Our equity return assumptions use a Gordon's growth model approach, in which returns are generated through the initial dividend yield and the growth rate of dividends (via earnings growth). Earnings are assumed to grow in line with productivity (i.e. growth in GDP per working age population).

While this forecast for productivity is the basis of our earnings and dividend growth assumptions, we adjust for areas where earnings and trend productivity have not tended to grow in line. This is the case in the emerging markets, where productivity gains have historically not translated fully into earnings growth. Hence we scale earnings growth downwards. Meanwhile, in Europe, where earnings growth has tended to exceed productivity growth, we scale earnings growth upwards.

Climate change and equity returns

Climate change matters a lot for equities. As discussed at length in our accompanying paper, the associated higher temperatures and costs of transition, including stranded assets, affect equities either directly or through their effects on productivity growth. In our approach, this productivity impact translates more or less directly into an impact on equity earnings.

Chart 11: Climate change impact on equity returns: breakdown of changes in our assumptions compared to no climate change scenario



Source: Cambridge Econometrics, Schroders Economics Group, January 2022.

Our equity return forecasts are broadly lower with climate change

Once we adjust for stranded assets in our partial mitigation scenario, it is clear that there will be winners and losers as a result of climate change. Chart 11 shows the total impact of climate change on our equity returns. In the developed world, European equities experiences a productivity boost thanks to a shift to clean technology and see minimal losses in terms of stranded assets.

But the US is assumed to see lower returns in a partial mitigation scenario given the drag from stranded assets and transition costs. Similarly, the UK is expected to experience lower returns due to losses from stranded assets as the market has significant exposure to the energy sector. Overall, our return forecast for the developed markets, led by the US, is slightly lower taking into consideration climate change.

Meanwhile, climate change is bad news for equity investors in some emerging markets. The biggest hit to return forecasts occur in countries such as Brazil, South

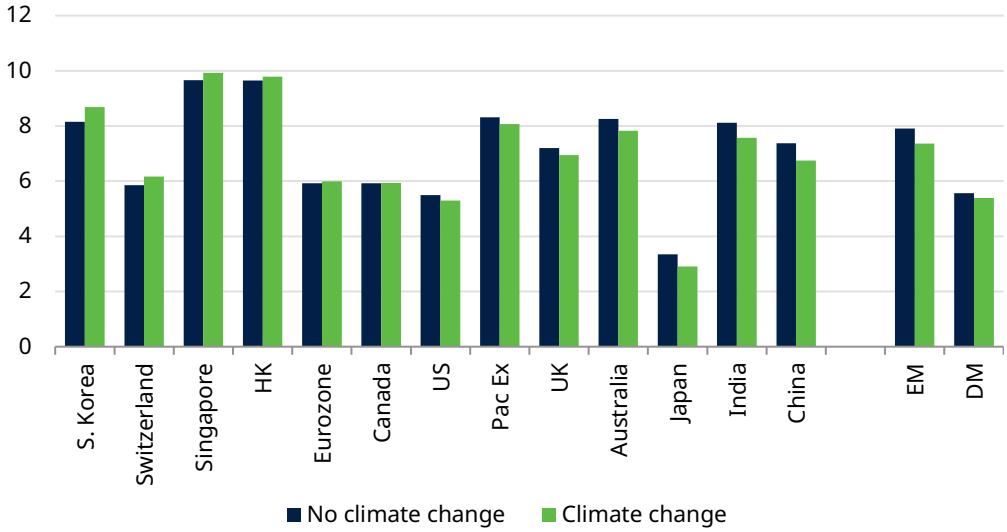
Africa and China driven mainly by stranded assets. For China, the lower return forecast is solely due to stranded assets.

Despite the substantial downgrades in emerging market returns from the incorporation of climate change, they are still expected to deliver higher returns than most of the developed markets (Chart 12). Compared to last year, the return premium between the emerging markets and the developed world has widened from 1.5% to 1.9% per annum. In the next section, we explain in more detail the upgrades in return expectations in some of the emerging market economies.

EM should outperform most of DM, but UK equities also look attractive

Chart 12: Nominal equity forecast returns with and without climate change

Nominal equity returns (% p.a. 2022–2051)



Source: Cambridge Econometrics, Schroders Economics Group, January 2022.

How do equity returns compare to last year's analysis?

Table 6 compares our equity return forecasts, incorporating climate change, with last year's estimates. This shows that the Eurozone, Hong Kong, South Korea, Australia, China and India will now deliver higher returns. By contrast, Japan and Taiwan are expected to experience lower returns over the next 30 years.

Table 6: Equity forecast returns compared to the previous year with climate change

% p.a. over the next 30 years	Currency	Nominal return (previous year)	Nominal return (current year)
Equity markets			
US	USD	5.3	**5.3**
UK	GBP	6.8	**6.9**
Eurozone	EUR	5.6	**6.0**
Japan	JPY	3.0	**2.9**
Switzerland	CHF	6.2	**6.2**
Canada	CAD	5.8	**5.9**
Australia	AUD	7.1	**7.8**
Hong Kong	HKD	9.1	**9.8**
Singapore	SGD	9.9	**9.9**
Pacific ex. Japan	Local	7.5	**8.1**

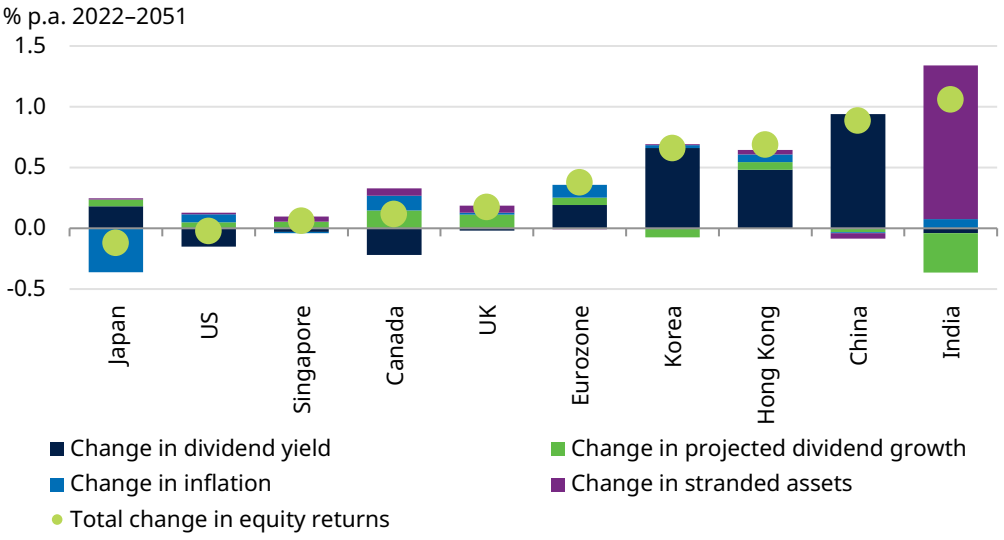
% p.a. over the next 30 years	Currency	Nominal return (previous year)	Nominal return (current year)
South Korea	KRW	8.0	**8.7**
Taiwan	TWD	8.1	**7.3**
China	CNY	5.9	**6.7**
India	INR	6.5	**7.6**
Emerging markets	Local	6.9	**7.4**
Developed markets	Local	5.4	**5.4**
Global	Local	5.6	**5.7**

Source: Schroders Economics Group, January 2021. Note: Returns are in local currency.

Chart 13 shows the changes in our current forecasts compared to last year's estimates. Some of the changes in our equity returns are due to revisions in our underlying equity assumptions on productivity growth and dividend yield. For instance, US equity returns have stayed relatively unchanged compared to last year as the decline in the dividend yield was offset by slightly higher inflation and productivity growth. For countries, such as Korea, China and Hong Kong, upgrades to return forecasts have been driven by higher initial dividend yields.

In general, our assumptions on climate change (via the impact of productivity growth) are similar to last year's analysis as we continue to use the methodology from Cambridge Econometrics. The only significant change in our climate change estimates comes via India, which is entirely driven by changes on our assumptions on stranded assets. We now estimate stranded assets based on India's national stock exchange rather than the Nifty 50 index. This is because the former is a broader index, which encompasses more companies so the stock market capitalisation is higher. As a result, we have upgraded Indian equity returns as this has translated into a reduction in stranded assets.

Chart 13: Breakdown of equity return forecasts compared to the previous year (with climate change)



Source: Cambridge Econometrics, Schroders Economics Group, January 2022.

Real estate

For private commercial real estate in the UK and Europe, our long-term forecasts are provided by the Schroders Real Estate team. The forecast consists of several components but, in similar fashion to other assets, includes an income and a capital growth component (table 7). Rental growth is based on the long-term inflation outlook where we assume that the price of commercial space will broadly change in line with that for other goods and services in the economy.

Meanwhile, we have incorporated the impact from climate change through the rental growth component. Overall, compared to our 2021 forecasts, the expected returns for both markets are lower due solely by the fall in future income return.

Table 7: Private commercial real estate forecasts with climate change

Component (% p.a. over the next 30 years)	UK	Europe
Future income return (initial property yield)	4.4	3.8
Potential income growth already in portfolio	0.3	0.3
Rental growth (inflation)	1.8	1.8
Depreciation	-2.0	-0.8
Refurbishment capital expenditure	-0.7	-1.3
Adjustment for depreciation and modernisation	1.7	1.3
Stamp Duty & Trading Fees	-1.0	-0.8
Nominal Total Return	**4.3**	**4.3**

Source: Schroders Real Estate, January 2022. Note: Returns are in local currency.

For the UK and European real estate securities (REITs, real estate investment trusts), we start with the returns on private real estate and then apply a discount or a premium to forecast the REIT return. Based on historical returns between the private and public property sectors, we find that European and UK REITs generally offer lower returns than the unlisted sector. In the UK, the illiquidity premium from owning private real estate appears to be small as public listed REITs can amplify returns by investing in higher risk assets and taking advantage of leverage in their capital structure.

Table 8: REITs return forecasts with climate change

Component (% p.a. over the next 30 years)	UK	Europe
Private commercial real estate return	4.3	4.3
Premium/discount	-0.3	-1.1
Nominal total return	**4.0**	**3.2**

Source: Schroders Real Estate, Schroders Economics Group, January 2022. Note: Returns are in local currency.

Private equity

Working with our private asset specialists, this year we include a forecast for US private equity. We apply a premium to our forecast for US small cap equities to estimate the private equity return (table 9).This premium, which is capturing the illiquidity and more broadly the complexity premium of the private sector, is based on comparing the historical performance of US private equity returns versus US small caps over the last 20 years. The choice of using small caps as the anchor for comparison is supported by the academic literature (further detail can be found in the 10-year capital market assumptions).

Table 9: US private equity forecasts with climate change

Component (% p.a. over the next 30 years)	
US small cap	6.0
Premium	2.0
Nominal total return	**8.1**

Source: Schroders Private Asset Steering Committee, Schroders Economics Group, January 2022.
Note: Returns are in local currency.

Accounting for currency moves

To ease comparison, we also attempt to incorporate the impact of currency on asset returns. To do this, we use uncovered interest parity theory. Here, an interest rate differential implies an offsetting exchange rate movement, such that holding dollars, sterling or euros yields the same return. So, if sterling cash yields a lower interest rate versus the dollar, it must be that sterling is expected to appreciate versus the dollar by an amount which makes up the difference. To keep our forecasts internally consistent, we use our cash rate forecasts as our interest rates for this purpose (equivalent to assuming a one-year hedge is put on and rolled each year for 30 years). Table 10 shows a selection of asset returns where we have incorporated the impact of currency moves.

Investors seeking the highest dollar returns over this time period would be drawn to the UK and Europe in equity, US high yield in credit, European private property, and US private equity.

Adjusting for currencies reinforces findings for dollar investors

Table 10: Nominal returns with climate change (% p.a. 2022–51)

UIP basis	USD	GBP	EUR
Cash	**1.8**	**1.4**	**1.0**
Government bonds (10-year)			
US Treasury bond	**2.9**	2.6	**2.1**
UK Gilt	**2.4**	2.1	**1.7**
Eurozone (Germany)	**2.5**	2.2	**1.8**
JGB	**2.2**	1.8	**1.4**
Inflation-linked (IL)			
Barclays 7–10 year IL Gilts	**2.2**	1.8	**1.4**
Barclays 7–10 year TIPS	**2.8**	2.4	**2.0**
Credit			
US Investment Grade	**4.0**	3.7	**3.2**
US High yield	**5.0**	4.6	**4.2**
UK Investment Grade	**3.6**	3.2	**2.8**
Euro Investment Grade	**3.6**	3.3	**2.8**
Euro High Yield	**4.3**	3.9	**3.5**
Real estate			
UK Commercial	**4.7**	4.3	**3.9**
EUR Commercial	**5.1**	4.7	**4.3**
UK REITs	**4.3**	4.0	**3.6**
EUR REITs	**3.9**	3.6	**3.2**
Private equity			
US private equity	**8.1**	7.7	**7.3**
Equity markets			
US	**5.3**	4.9	**4.5**
US small cap	**6.0**	5.6	**5.2**
UK	**7.3**	6.9	**6.5**
UK small cap	**8.1**	7.8	**7.3**
Europe ex. UK	**6.8**	6.5	**6.0**
Eurozone	**6.8**	6.4	**6.0**
Japan	**4.9**	4.6	**4.2**

Source: Schroders Economics Group, January 2021.

Appendix

Asia cash forecast methodology

For our Asia cash forecasts, we base our projections on the US real cash rate, adjusted for productivity growth versus the US (table A1). In addition, we make further adjustments to the cash returns to take account of historical performance.

As a result, some of the forecasts come in above the US cash number, as these economies have higher productivity growth forecast than the US, such as China and India.

Table A1: Cash return forecasts for Asia based on partial mitigation scenario (2022-51)

% p.a. over the next 30 years	Currency	Nominal return	Inflation	Real return
Cash				
US	USD	**1.8**	2.8	**3.8**
Taiwan	TWD	**0.4**	1.2	**-0.8**
Korea	KRW	**2.0**	2.4	**-0.3**
China	CNY	**4.4**	2.3	**2.1**
India	INR	**4.8**	4.6	**0.3**
Hong Kong	HKD	**1.8**	2.2	**-0.3**
Singapore	SGD	**2.0**	2.0	**0.1**
Australia	AUD	**2.7**	2.6	**0.0**

Source: Schroders Economics Group, January 2022. Note: Returns are in local currency.

Table A2: Long-run return assumptions based on partial mitigation scenario (2022–51)

% p.a. over the next 30 years	Currency	Yield	Capital gain	Nominal return	Inflation	Real return
Cash						
$ cash	USD	1.8	N/A	**1.8**	2.2	**-0.3**
£ cash	GBP	1.4	N/A	**1.4**	1.8	**-0.3**
€ cash	EUR	1.0	N/A	**1.0**	1.8	**-0.8**
¥ cash	JPY	-0.2	N/A	**-0.2**	0.3	**-0.5**
Canada	CAD	1.4	N/A	**1.4**	2.0	**-0.6**
Australia	AUD	2.7	N/A	**2.7**	2.6	**0.0**
Hong Kong	HKD	1.8	N/A	**1.8**	2.2	**-0.3**
Singapore	SGD	2.0	N/A	**2.0**	2.0	**0.1**
G4 cash	Local	1.0	N/A	**1.0**	1.6	**-0.5**
Government bonds (10y)						
US Treasury bond	USD	2.9	N/A	**2.9**	2.2	**0.7**
UK Gilt	GBP	2.1	N/A	**2.1**	1.8	**0.3**
Eurozone (Germany)	EUR	1.8	N/A	**1.8**	1.8	**0.0**
JGB	JPY	0.2	N/A	**0.2**	0.3	**-0.1**
Canada	CAD	2.2	N/A	**2.2**	2.0	**0.2**
Australia	AUD	3.0	N/A	**3.0**	2.6	**0.4**
Hong Kong	HKD	3.1	N/A	**3.1**	2.2	**0.9**
Singapore	SGD	2.8	N/A	**2.8**	2.0	**0.8**

% p.a. over the next 30 years	Currency	Yield	Capital gain	Nominal return	Inflation	Real return
G4 bond	Local	1.8	N/A	**1.8**	1.6	**0.2**
Inflation-linked (IL)						
Barclays 7–10 year IL Gilts	GBP	1.9	N/A	**1.9**	2.1	**-0.2**
Barclays 7–10 year TIPS	USD	2.8	N/A	**2.8**	2.2	**0.6**
Credit						
US Investment Grade	USD	4.0	N/A	**4.0**	2.2	**1.8**
US High yield	USD	5.0	N/A	**5.0**	2.2	**2.8**
UK Investment Grade	GBP	3.2	N/A	**3.2**	1.8	**1.4**
Euro Investment Grade	EUR	2.8	N/A	**2.8**	1.8	**1.0**
Euro High Yield	EUR	3.5	N/A	**3.5**	1.8	**1.7**
$EMD	USD	5.1	N/A	**5.1**	2.5	**2.5**
Real estate						
UK Commercial	GBP	4.4	0.0	**4.3**	1.8	**2.5**
EUR Commercial	EUR	3.8	0.5	**4.3**	1.8	**2.5**
UK REITs	GBP	3.8	0.2	**4.0**	1.8	**2.2**
EUR REITs	EUR	4.1	-0.9	**3.2**	1.8	**1.3**
Private equity						
US private equity	USD	N/A	N/A	**8.1**	2.2	**5.8**
Equity markets						
US	USD	1.3	3.9	**5.3**	2.2	**3.1**
US small cap	USD	1.2	4.7	**6.0**	2.2	**3.8**
UK	GBP	3.5	3.3	**6.9**	1.8	**5.1**
UK small cap	GBP	2.6	5.1	**7.8**	1.8	**5.9**
Europe ex.UK	EUR	2.2	3.8	**6.0**	1.6	**4.4**
Eurozone	EUR	2.1	3.8	**6.0**	1.8	**4.1**
Japan	JPY	2.1	0.8	**2.9**	0.3	**2.6**
Canada	CAD	2.6	3.3	**5.9**	2.0	**3.9**
Switzerland	CHF	2.3	3.8	**6.2**	1.0	**5.1**
Singapore	SGD	3.4	6.3	**9.9**	2.0	**7.8**
Pacific ex.Japan	Local	3.2	4.7	**8.0**	2.5	**5.4**
Emerging markets	Local	2.6	4.6	**7.4**	2.5	**4.7**
Developed markets	Local	1.7	3.6	**5.4**	1.9	**3.4**
Global	Local	1.8	3.8	**5.7**	2.0	**3.6**
Global equity risk premium		v. G4 bonds		**3.8**		**3.3**
		v. G4 cash		**4.6**		**4.1**

Source: Source: Thomson Datastream, Schroders Economics Group. January 2022.
Note: UK Index-linked returns use RPI inflation for the nominal return. Returns are in local currency.

Table A3: Long-run return assumptions for Asia based on partial mitigation scenario (2022–51)

% p.a. over the next 30 years	Currency	Yield	Capital gain	Nominal return	Inflation	Real return
Equity markets						
Asia ex. Japan	USD	2.4	5.2	**7.7**	2.4	**5.2**
Taiwan	TWD	2.9	4.3	**7.3**	1.2	**6.0**
Korea	KRW	2.0	6.5	**8.7**	2.4	**6.2**
China	CNY	2.6	4.1	**6.7**	2.3	**4.3**
India	INR	1.2	6.3	**7.6**	4.6	**2.9**
Hong Kong	HKD	2.2	7.4	**9.8**	2.2	**7.5**
Singapore	SGD	3.4	6.3	**9.9**	2.0	**7.8**
Australia	AUD	2.7	5.0	**7.8**	2.6	**5.0**
Cash						
TWD	TWD	0.4	N/A	**0.4**	1.2	**-0.8**
KRW	KRW	2.0	N/A	**2.0**	2.4	**-0.3**
CNY	CNY	4.4	N/A	**4.4**	2.3	**2.1**
INR	INR	4.8	N/A	**4.8**	4.6	**0.3**
HKD	HKD	1.8	N/A	**1.8**	2.2	**-0.3**
SGD	SGD	2.0	N/A	**2.0**	2.0	**0.1**
AUD	AUD	2.7	N/A	**2.7**	2.6	**0.0**
Government bonds (10y)						
Hong Kong	HKD	3.1	N/A	**3.1**	2.2	**0.9**
Singapore	SGD	2.8	N/A	**2.8**	2.0	**0.8**
Australia	AUD	3.0	N/A	**3.0**	2.6	**0.4**
Asian Govt.	USD	4.4	N/A	**4.4**	3.0	**1.4**
Credit						
Asian Credit (JACI Index)	USD	4.6	N/A	**4.6**	2.4	**2.2**
Asian Local Currency Bonds	USD	4.8	N/A	**4.8**	3.0	**1.7**

Source: Thomson Datastream, Schroders Economics Group, January 2022. Note: Returns are in local currency.

Table A4: Long-run return assumptions based on net zero scenario (2022–51)

% p.a. over the next 30 years	Currency	Yield	Capital gain	Nominal return	Inflation	Real return
Cash						
$ cash	USD	1.8	N/A	**1.8**	2.1	**-0.3**
£ cash	GBP	1.6	N/A	**1.6**	2.0	**-0.4**
€ cash	EUR	1.0	N/A	**1.0**	1.8	**-0.8**
¥ cash	JPY	-0.1	N/A	**-0.1**	0.4	**-0.5**
Canada	CAD	1.6	N/A	**1.6**	2.2	**-0.6**

% p.a. over the next 30 years	Currency	Yield	Capital gain	Nominal return	Inflation	Real return
Australia	AUD	2.5	N/A	**2.5**	2.5	**0.0**
Hong Kong	HKD	1.8	N/A	**1.8**	2.1	**-0.3**
Singapore	SGD	1.9	N/A	**1.9**	1.8	**0.1**
G4 cash	Local	1.0	N/A	**1.0**	1.6	**-0.5**
Government bonds (10y)						
US Treasury bond	USD	2.9	N/A	**2.9**	2.1	**0.7**
UK Gilt	GBP	2.2	N/A	**2.2**	2.0	**0.3**
Eurozone (Germany)	EUR	1.8	N/A	**1.8**	1.8	**-0.1**
JGB	JPY	0.3	N/A	**0.3**	0.4	**-0.1**
Canada	CAD	2.4	N/A	**2.4**	2.2	**0.2**
Australia	AUD	2.9	N/A	**2.9**	2.5	**0.4**
Hong Kong	HKD	3.1	N/A	**3.1**	2.1	**0.9**
Singapore	SGD	2.6	N/A	**2.6**	1.8	**0.8**
G4 bond	Local	1.8	N/A	**1.8**	1.6	**0.2**
Inflation-linked (IL)						
Barclays 7–10 year IL Gilts	GBP	1.9	N/A	**1.9**	2.3	**-0.4**
Barclays 7–10 year TIPS	USD	2.7	N/A	**2.7**	2.1	**0.6**
Credit						
US Investment Grade	USD	4.0	N/A	**4.0**	2.1	**1.8**
US High yield	USD	4.9	N/A	**4.9**	2.1	**2.8**
UK Investment Grade	GBP	3.4	N/A	**3.4**	2.0	**1.4**
Euro Investment Grade	EUR	2.9	N/A	**2.9**	1.8	**1.0**
Euro High Yield	EUR	3.5	N/A	**3.5**	1.8	**1.6**
$EMD	USD	5.1	N/A	**5.1**	2.5	**2.6**
Real estate						
UK Commercial	GBP	4.4	0.2	**4.5**	2.0	**2.5**
EUR Commercial	EUR	3.8	0.5	**4.3**	1.8	**2.4**
UK REITs	GBP	3.8	0.3	**4.2**	2.0	**2.2**
EUR REITs	EUR	4.1	-0.9	**3.2**	1.8	**1.3**
Private equity						
US private equity	USD	N/A	N/A	**8.1**	2.1	**5.8**
Equity markets						
US	USD	1.3	3.9	**5.3**	2.1	**3.1**
US small cap	USD	1.2	4.7	**6.0**	2.1	**3.8**
UK	GBP	3.5	3.5	**7.1**	2.0	**5.0**
UK small cap	GBP	2.6	5.2	**7.9**	2.0	**5.8**
Europe ex.UK	EUR	2.2	3.8	**6.1**	1.6	**4.4**
Eurozone	EUR	2.1	3.8	**6.0**	1.8	**4.1**
Japan	JPY	2.1	0.9	**3.0**	0.4	**2.6**
Canada	CAD	2.6	3.4	**6.1**	2.2	**3.8**

% p.a. over the next 30 years	Currency	Yield	Capital gain	Nominal return	Inflation	Real return
Switzerland	CHF	2.3	3.9	**6.3**	1.2	**5.1**
Singapore	SGD	3.4	6.1	**9.7**	1.8	**7.8**
Pacific ex.Japan	Local	3.2	4.6	**8.0**	2.3	**5.5**
Emerging markets	Local	2.6	4.6	**7.3**	2.5	**4.7**
Developed markets	Local	1.7	3.6	**5.4**	2.0	**3.4**
Global	Local	1.8	3.8	**5.6**	2.0	**3.6**
Global equity risk premium		v. G4 bonds		**3.8**		**3.4**
		v. G4 cash		**4.6**		**4.1**

Source: Thomson Datastream, Schroders Economics Group. January 2022. Note: UK Index-linked returns use RPI inflation for the nominal return. Returns are in local currency.

Table A5: Long-run return assumptions for Asia based on the net zero scenario (2022–51)

% p.a. over the next 30 years	Currency	Yield	Capital gain	Nominal return	Inflation	Real return
Equity markets						
Asia ex. Japan	USD	2.4	5.1	**7.6**	2.3	**5.2**
Taiwan	TWD	2.9	4.2	**7.2**	1.2	**5.9**
Korea	KRW	2.0	6.2	**8.4**	2.1	**6.2**
China	CNY	2.6	4.1	**6.7**	2.3	**4.4**
India	INR	1.2	6.1	**7.3**	4.2	**3.0**
Hong Kong	HKD	2.2	7.2	**9.6**	2.1	**7.3**
Singapore	SGD	3.4	6.1	**9.7**	1.8	**7.8**
Australia	AUD	3.6	4.0	**7.7**	2.5	**5.1**
Cash						
TWD	TWD	0.3	N/A	**0.3**	1.2	**-0.9**
KRW	KRW	1.7	N/A	**1.7**	2.1	**-0.4**
CNY	CNY	4.4	N/A	**4.4**	2.3	**2.0**
INR	INR	4.6	N/A	**4.6**	4.2	**0.3**
HKD	HKD	1.8	N/A	**1.8**	2.1	**-0.3**
SGD	SGD	1.9	N/A	**1.9**	1.8	**0.1**
AUD	AUD	2.5	N/A	**2.5**	2.5	**0.0**
Government bonds (10y)						
Hong Kong	HKD	3.1	N/A	**3.1**	2.1	**0.9**
Singapore	SGD	2.6	N/A	**2.6**	1.8	**0.8**
Australia	AUD	2.9	N/A	**2.9**	2.5	**0.4**
Asian Govt.	USD	4.3	N/A	**4.3**	2.9	**1.4**
Credit						
Asian Credit (JACI Index)	USD	4.5	N/A	**4.5**	2.3	**2.2**
Asian Local Currency Bonds	USD	4.6	N/A	**4.6**	2.9	**1.7**

Source: Thomson Datastream, Schroders Economics Group. January 2022. Returns are in local currency.

Schroders

Schroder Investment Management Limited

1 London Wall Place, London EC2Y 5AU
Tel: + 44(0) 20 7658 6000

schroders.com
@Schroders