Uncommon truths
Has Africa sidestepped the pandemic?

At first sight, Africa has escaped relatively lightly from the Covid pandemic, both in human and economic terms. However, the continent may struggle until vaccines are more widely available.

When Covid-19 was turning into a global pandemic, it was commonly supposed that poor countries would suffer the worst consequences and that, among regions, Africa was the most vulnerable. Well, it hasn't quite turned out that way, at least judging by Covid infection and mortality data.

As of 7 April 2021, Africa had recorded roughly 4.3 million cases of Covid-19 and 114,432 deaths (according to our aggregation across the 54 nations of Africa). To put that into perspective, the Covid death toll in the UK was 126,882 (with 5% of the population of Africa). So, at first sight, Africa has avoided the worst of the pandemic.

Figures 1a and **1b** put Africa's Covid-19 case and death data into a global context and, again, the comparison is favourable. Of course, if Africa were excluded from the global totals, the comparison would be even more extreme. Using cumulative totals, Africa's Covid-19 mortality rate is 85 deaths per million of population, well below the global average of 385.

However, it is not all good news: a comparison of the cumulative cases and deaths gives a case fatality rate of 2.7% for Africa, above the 2.3% for the world. If the data is to be believed, African countries would seem to have done a relatively good job of preventing the spread of the virus but have not fared so well once somebody is infected. Indeed, that case fatality rate comparison may be worse than it appears, given that Covid-19 has worse outcomes for the elderly and that Africa has a relatively young population (median age of 19.7 versus 30.9 for the world, according to United Nations estimates for 2020).

It may come as no surprise that Africa's case fatality rate is higher than the global average, given that many of the continent's countries are relatively poor and therefore spend less on healthcare. However, its low incidence of Covid-19 is unexpected. We can think of a number of reasons for this: first, environmental and demographic factors may have helped; second, African countries are used to dealing with infections much worse than Covid (Ebola, for example) and may have been better prepared than the developed world to control this outbreak and, third, less testing is done than in other countries, so cases are not being identified and Covid-related deaths are being mis-diagnosed (i.e. the data is wrong).

It has already been mentioned that Africa has a relatively young population and it also has a low incidence of some comorbidities (for example, 5.4% of the Sub-Saharan 20-79 population has diabetes, compared to 8.8% for the world as a whole, according to World Bank data). Researchers from the State University of Washington, the University of Nairobi and the University of Liverpool find that this age factor, along with a climate that encourages outdoor socialising, are the most likely explanations of why Africa appears to have had limited infections and deaths (see here).

When it comes to pandemic readiness, it appears that African countries were both quick and innovative in their reaction. An analysis from Sky News suggests that at least 40 African countries had imposed their toughest lockdown measures before their 10th Covid death was registered (the UK had seen more than 180 deaths before it went into full lockdown).

Figure 1a – Covid cases (7-day total as % of pop.)

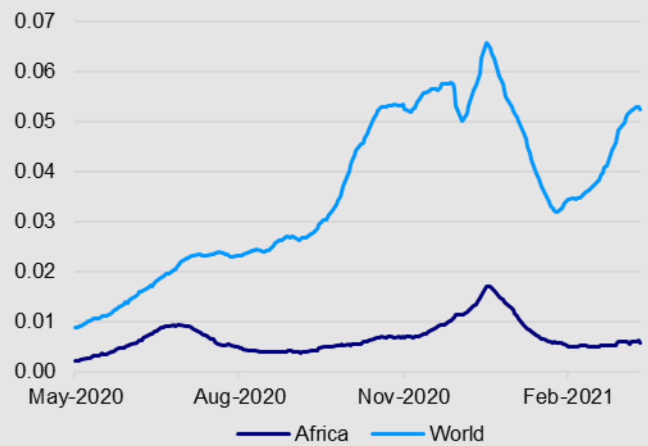
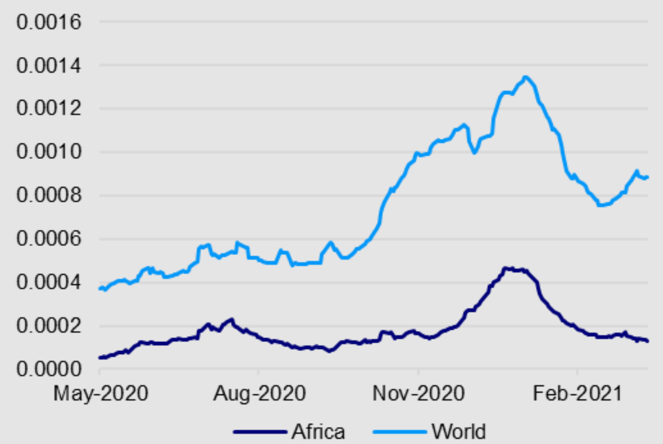


Figure 1b – Covid deaths (7-day total as % of pop.)



Based on daily data from 26 May 2020 to 07 April 2021. Charts show Covid-19 cases and deaths over rolling 7-day periods as a percent of the relevant populations (using estimates for 2021 population). Source: IMF, Oxford Economics, Reuters, Refinitiv Datastream and Invesco

In terms of innovation, African countries have had to deal with numerous infectious diseases with low healthcare budgets. As necessity is the mother of invention, this has inevitably led to some interesting developments in Africa's public health efforts. Apart from the simple expedients of closing down countries, face masks and social distancing, technology has been harnessed in ways not seen elsewhere.

In an October 2020 report, the World Health Organisation (WHO) estimated that Africa accounted for 12.8% of Covid-related technological innovations (see here). That may be less than Africa's share of the global population but is nonetheless impressive for a continent not reckoned to be a leader in the sphere of technology. Examples include the use of robots and drones in Rwanda.

There have also been interesting experiments such as pooled Covid-testing, whereby samples from up to 100 people can be pooled and tested together to reveal if anybody in the group is infected (see this article from Nature). If not, they move on to the next group. If so, then individual testing can take place among group members.

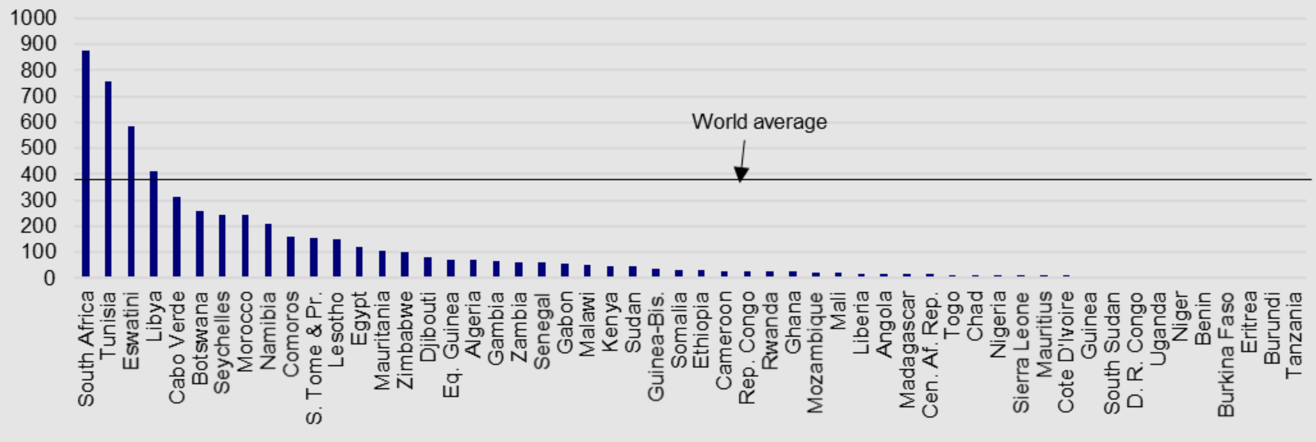
Of course, the big elephant in the room is low rates of testing for Covid, which naturally bias downward the number of cases detected and the number of deaths attributed to Covid-19. Out of the 22 African countries included in the Our World in Data testing database, the highest rate of testing is found in South Africa with 170 tests so far conducted per 1000 inhabitants (up to 9 April 2021), followed by Morocco (150) and Namibia (140). The lowest rates of testing are found in Madagascar (5), Nigeria (9) and Malawi (12).

To put those figures into perspective, consider that the UK has conducted 1912 tests per 1000 inhabitants, followed among the countries we analysed by Israel (1769) and Singapore (1502). Not surprisingly, there is a relationship between GDP per capita and the intensity of testing (according to Our World in Data), with both India (184) and Indonesia (32) falling within the range of tests conducted by African countries. However, the extent of testing may also be impacted by a lack of urgency due to lack of infections, with South Korea (156) and Japan (77) being obvious rich country examples. It may also be a matter of policy choice/neglect, with Brazil (30) being the obvious case.

Hence, the fact that Madagascar has only conducted 5 tests per 1000 inhabitants may be due to the isolated nature of that Island. However, with the positivity rate (the share of tests that are positive) recently running at 28%, it would seem that Madagascar is not doing enough testing (Johns Hopkins suggests the positivity rate should remain below 5%, whereas the WHO suggested that 3%-12% is an acceptable range). There is a fair spread of positivity rates across the African countries within the Our World in Data universe, with some below 2% and perhaps doing too much testing (Ghana, Mauritania, Nigeria, Uganda and Zimbabwe), while some are well above the WHO range and therefore probably not doing enough testing (Democratic Republic of Congo, Ethiopia, Libya, Madagascar and Tunisia).

That final point is a reminder that Africa is not a single entity but rather a diverse collection of 54 countries. **Figure 2** shows the mortality rates across African countries, ranging from 0.35 deaths per million of population in Tanzania to 877 in South Africa.

Figure 2 – Cumulative Covid mortality rates across African countries (deaths per million of population)



The chart shows total Covid-19 deaths up to 7 April 2021 per million of population. Abbreviations: "Cen. Af. Rep." = Central African Republic, "D.R. Congo" = Democratic Republic of The Congo, "Eq. Guinea" = Equatorial Guinea, "Rep. Congo" = Republic of the Congo, "S. Tome & Pr." = Sao Tome & Principe. Source: IMF, Oxford Economics, Reuters, Refinitiv Datastream and Invesco

Where Africa goes from here is hard to know. Economic data for 2020 is sparse but the six countries for which data is available experienced year-on-year GDP declines in 2020 Q4 that ranged from 0.6% in Rwanda to 6.0% in Morocco and Namibia. Those GDP outcomes compare well with developed world countries such as Spain (-8.9%), UK (-7.3), Italy (-6.6%), France (-4.9%) and Germany (-2.7%).

Of course, vaccination programmes are key to allowing economies to open and grow. Unfortunately, Africa is well behind the developed world in this endeavour. Of the 25 African countries for which we have data (from Our World in Data), 20 have vaccinated 1% or less of their population (with at least one dose). Morocco is the stand-out performer with 12% of the population already vaccinated, followed by Sao Tome & Principe on 4%.

Even for those countries there is still a long way to go and many others haven't even started. It seems likely that African countries will have to resort to some form of economic lockdown for longer than countries in other parts of the world and that their citizens will face Covid-related restrictions on entry to other nations for some time to come.

In conclusion, African nations appear to have suffered less than other parts of the world when it comes to Covid infections and deaths. However, the situation may not be as rosy as it seems, with low rates of testing perhaps skewing Covid case/death data downward. The limited information available suggests that economic performance during 2020 was in line with that of many European countries (though growth in Africa would normally be higher than in Europe) but the recovery from the Covid-recession may be slower in Africa due to lack of access to vaccines. As ever, Africa is not a single entity and it is important to treat each country upon its own merits.

Unless stated otherwise, all data as of 09 April 2021

Invesco

Figure 3 – Asset class total returns

Data as at 08/04/2021		Current	Total Return (USD, %)					Total Return (Local Currency, %)				
	Index	Level/RY	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Equities												
World	MSCI	693	1.8	6.1	2.9	7.7	52.9	1.6	6.1	2.7	8.8	48.8
Emerging Markets	MSCI	1343	0.6	2.9	2.1	4.5	57.5	0.4	2.7	1.9	6.0	51.7
China	MSCI	110	-0.7	1.4	1.8	1.4	44.4	-0.7	1.5	1.8	1.7	43.4
US	MSCI	3980	2.0	7.6	3.3	9.0	54.6	2.0	7.6	3.3	9.0	54.6
Europe	MSCI	1960	2.3	5.3	3.0	7.3	48.6	1.4	5.1	2.0	9.9	35.7
Europe ex-UK	MSCI	2460	2.3	6.0	3.0	6.7	51.8	0.9	5.5	1.6	10.2	39.1
UK	MSCI	1114	2.5	3.0	3.0	9.3	38.2	3.1	3.6	3.5	8.9	24.6
Japan	MSCI	3934	1.0	3.6	1.2	3.0	40.1	-0.2	4.0	0.1	9.0	40.8
Government Bonds												
World	BofA-ML	0.48	0.8	0.1	1.0	-4.9	2.0	0.2	0.2	0.4	-2.7	-1.4
Emerging Markets	BBloom	4.55	0.9	2.4	1.4	-6.0	19.8	0.9	2.4	1.4	-6.0	19.8
China	BofA-ML	3.12	0.4	0.2	0.1	0.8	6.9	0.0	0.6	0.0	0.9	-1.0
US (10y)	Datastream	1.63	0.9	0.2	1.5	-5.3	-6.0	0.9	0.2	1.5	-5.3	-6.0
Europe	Bofa-ML	-0.05	1.1	0.6	1.4	-4.9	13.3	-0.1	0.2	0.1	-2.2	3.4
Europe ex-UK (EMU, 10y)	Datastream	-0.38	1.3	0.9	1.6	-4.7	10.1	0.1	0.5	0.4	-2.0	0.5
UK (10y)	Datastream	0.78	-0.2	-0.5	0.5	-4.5	7.4	0.5	0.1	1.0	-4.9	-3.1
Japan (10y)	Datastream	0.09	1.5	-0.1	1.2	-6.0	-0.8	0.3	0.2	0.1	-0.5	-0.4
IG Corporate Bonds												
Global	BofA-ML	1.74	0.6	0.8	1.1	-3.3	12.3	0.3	0.7	0.8	-2.5	8.9
Emerging Markets	BBloom	3.84	0.5	0.9	0.8	-1.1	27.6	0.5	0.9	0.8	-1.1	27.6
China	BofA-ML	4.01	0.5	0.1	0.2	1.0	9.1	0.1	0.5	0.1	1.1	1.0
US	BofA-ML	2.26	0.3	0.9	1.0	-3.5	9.3	0.3	0.9	1.0	-3.5	9.3
Europe	BofA-ML	0.40	1.3	0.8	1.6	-3.1	19.0	0.1	0.4	0.4	-0.3	8.6
UK	BofA-ML	1.88	-0.2	-0.6	0.4	-3.2	18.9	0.5	0.1	0.9	-3.6	7.3
Japan	BofA-ML	0.41	1.3	-0.2	1.2	-5.4	0.3	0.1	0.2	0.0	0.1	0.8
HY Corporate Bonds												
Global	BofA-ML	4.67	0.7	1.2	0.9	0.8	26.7	0.5	1.1	0.7	1.4	24.5
US	BofA-ML	4.76	0.6	1.2	0.8	1.7	24.8	0.6	1.2	0.8	1.7	24.8
Europe	BofA-ML	2.88	1.5	1.4	1.7	-0.8	31.8	0.3	1.0	0.5	2.1	20.4
Cash (Overnight LIBOR)												
US		0.07	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Euro Area		-0.59	1.1	0.5	1.6	-2.6	9.1	0.0	-0.1	0.0	-0.2	-0.6
UK		0.04	-0.7	-0.7	-0.3	0.4	10.9	0.0	0.0	0.0	0.0	0.0
Japan		-0.09	1.2	-0.3	1.3	-5.5	-0.5	0.0	0.0	0.0	0.0	-0.1
Real Estate (REITs)												
Global	FTSE	1913	1.1	5.0	2.4	8.5	32.7	0.0	4.7	1.1	11.6	21.2
Emerging Markets	FTSE	2057	0.2	3.3	-0.1	4.7	18.6	-0.9	2.9	-1.3	7.6	8.3
US	FTSE	3132	0.3	5.3	2.5	12.4	35.5	0.3	5.3	2.5	12.4	35.5
Europe ex-UK	FTSE	3657	3.8	5.9	5.5	-2.1	34.3	2.6	5.5	4.3	0.7	22.7
UK	FTSE	1439	2.1	5.4	3.3	7.6	32.4	2.8	6.1	3.8	7.1	19.4
Japan	FTSE	2840	2.2	5.7	1.4	9.4	32.9	1.0	6.2	0.2	15.8	33.5
Commodities												
All	GSCI	2270	-0.3	-3.2	1.1	14.8	43.3	-	-	-	-	-
Energy	GSCI	326	-2.5	-7.2	0.4	22.1	43.8	-	-	-	-	-
Industrial Metals	GSCI	1567	2.5	2.0	2.7	12.0	58.0	-	-	-	-	-
Precious Metals	GSCI	2043	1.8	4.2	2.7	-7.1	5.9	-	-	-	-	-
Agricultural Goods	GSCI	429	2.7	-0.6	1.3	7.3	39.3	-	-	-	-	-
Currencies (vs USD)*												
EUR		1.19	1.2	0.6	1.6	-2.5	9.7	-	-	-	-	-
JPY		109.26	1.2	-0.3	1.3	-5.5	-0.4	-	-	-	-	-
GBP		1.37	-0.7	-0.6	-0.5	0.4	10.9	-	-	-	-	-
CHF		1.08	1.9	1.3	2.0	-4.3	5.1	-	-	-	-	-
CNY		6.55	0.2	-0.4	0.0	-0.4	7.9	-	-	-	-	-

Notes: *The currency section is organised so that in all cases the numbers show the movement in the mentioned currency versus USD (+ve indicates appreciation, -ve indicates depreciation). Past performance is no guarantee of future results. Please see appendix for definitions, methodology and disclaimers. Source: Refinitiv Datastream and Invesco

Figure 4 – World equity sector total returns relative to market (%)

Data as at 08/04/2021	Global				
	1w	1m	QTD	YTD	12m
Energy	**-2.5**	**-7.6**	**-3.3**	**1.2**	**-13.2**
Basic Materials	**0.8**	**-0.9**	**0.6**	**3.2**	**14.6**
Basic Resources	2.0	-0.8	2.0	5.0	21.3
Chemicals	-0.8	-1.0	-1.2	0.9	6.9
Industrials	**0.0**	**-0.1**	**0.0**	**1.6**	**6.5**
Construction & Materials	0.0	0.0	-0.2	2.9	7.9
Industrial Goods & Services	0.1	-0.1	0.0	1.4	6.3
Consumer Discretionary	**0.5**	**1.2**	**0.4**	**-1.2**	**7.4**
Automobiles & Parts	-0.3	3.1	-1.4	0.2	45.1
Media	-0.4	-6.2	0.5	-1.9	6.9
Retailers	1.0	2.9	0.8	-3.3	-5.6
Travel & Leisure	0.2	-1.3	0.2	3.5	5.5
Consumer Products & Services	0.8	1.5	1.1	-1.2	12.4
Consumer Staples	**0.3**	**0.2**	**-0.7**	**-5.0**	**-15.2**
Food, Beverage & Tobacco	0.7	0.2	-0.1	-4.2	-13.9
Personal Care, Drug & Grocery Stores	-0.5	0.2	-1.8	-6.5	-17.6
Healthcare	**-1.2**	**-1.1**	**-1.9**	**-6.3**	**-16.7**
Financials	**-0.8**	**-3.3**	**-1.0**	**4.5**	**2.5**
Banks	-1.2	-4.6	-1.8	6.1	2.4
Financial Services	-0.3	-1.1	0.1	3.1	5.1
Insurance	-0.3	-3.1	-0.5	2.7	-1.0
Real Estate	**-0.4**	**1.2**	**-0.5**	**0.0**	**-12.0**
Technology	**1.5**	**5.0**	**3.1**	**2.0**	**14.5**
Telecommunications	**-1.0**	**-2.1**	**-1.4**	**-1.9**	**-11.9**
Utilities	**0.1**	**1.8**	**-0.8**	**-4.7**	**-12.5**

Notes: Returns shown are for Datastream sector indices versus the total market index. Past performance is no guarantee of future results.
Source: Refinitiv Datastream and Invesco

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Figure 5 – Model asset allocation

	Neutral	Policy Range		Allocation	Position vs Neutral
Cash Equivalents	**5%**	**0-10%**		**10%**	
Cash	2.5%			10%	
Gold	2.5%			0%	
Bonds	**40%**	**10-70%**	↑	**22%**	
Government	25%	10-40%	↑	**17%**	
US	8%		↑	5%	
Europe ex-UK (Eurozone)	7%			4%	
UK	1%		↓	1%	
Japan	7%		↑	4%	
Emerging Markets	2%		↓	3%	
China**	0.2%		↓	0%	
Corporate IG	10%	0-20%		0%	
US Dollar	5%			0%	
Euro	2%			0%	
Sterling	1%			0%	
Japanese Yen	1%			0%	
Emerging Markets	1%			0%	
China**	0.1%			0%	
Corporate HY	5%	0-10%		5%	
US Dollar	4%		↑	5%	
Euro	1%		↓	0%	
Equities	**45%**	**25-65%**		**50%**	
US	25%			18%	
Europe ex-UK	7%			12%	
UK	4%		↑	7%	
Japan	4%		↓	5%	
Emerging Markets	5%			8%	
China**	2%		↓	2%	
Real Estate	**8%**	**0-16%**		**16%**	
US	2%		↑	4%	
Europe ex-UK	2%			4%	
UK	1%		↓	1%	
Japan	2%		↑	4%	
Emerging Markets	1%			3%	
Commodities	**2%**	**0-4%**	↓	**2%**	
Energy	1%		↓	1%	
Industrial Metals	0.3%		↓	0%	
Precious Metals	0.3%			0%	
Agriculture	0.3%			1%	
Total	**100%**			**100%**	
Currency Exposure (including effect of hedging)					
USD	48%		↑	40%	
EUR	20%		↓	22%	
GBP	7%		↓	10%	
JPY	15%		↑	14%	
EM	9%		↓	14%	
Total	**100%**			**100%**	

Notes: This is a theoretical portfolio and is for illustrative purposes only. See the latest The Big Picture document for more details. It does not represent an actual portfolio and is not a recommendation of any investment or trading strategy. Arrows indicate the direction of the most recent changes. Source: Invesco

Figure 6 – Model allocation for global sectors

	Neutral	Invesco		Preferred Region
Energy	**5.8%**	**Neutral**		**US**
Basic Materials	**4.3%**	**Underweight**	↓	**Europe**
Basic Resources	2.4%	Underweight		Europe
Chemicals	1.9%	Neutral	↓	US
Industrials	**12.8%**	**Neutral**	↓	**US**
Construction & Materials	1.6%	Neutral		Europe
Industrial Goods & Services	11.3%	Neutral	↓	US
Consumer Discretionary	**16.5%**	**Overweight**	↑	**Japan**
Automobiles & Parts	2.7%	Underweight		Japan
Media	1.4%	Overweight	↑	US
Retailers	6.1%	Underweight	↓	EM
Travel & Leisure	2.1%	Overweight	↑	US
Consumer Products & Services	4.2%	Overweight	↑	Japan
Consumer Staples	**6.6%**	**Overweight**		**Europe**
Food, Beverage & Tobacco	4.3%	Overweight		Europe
Personal Care, Drug & Grocery Stores	2.3%	Underweight		Europe
Healthcare	**10.3%**	**Underweight**	↓	**Europe**
Financials	**13.7%**	**Neutral**		**EM**
Banks	6.3%	Neutral		EM
Financial Services	4.1%	Overweight		US
Insurance	3.2%	Neutral	↑	Europe
Real Estate	**3.4%**	**Overweight**		**EM**
Technology	**19.0%**	**Overweight**		**US**
Telecommunications	**4.2%**	**Neutral**		**Europe**
Utilities	**3.4%**	**Neutral**		**Europe**

Notes: These are theoretical allocations which are for illustrative purposes only. They do not represent an actual portfolio and are not a recommendation of any investment or trading strategy. See the latest Strategic Sector Selector for more details.
Source: Refinitiv Datastream and Invesco

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Appendix

Methodology for asset allocation, expected returns and optimal portfolios

Portfolio construction process

The optimal portfolios are theoretical and not real. We use optimisation processes to guide our allocations around "neutral" and within prescribed policy ranges based on our estimations of expected returns and using historical covariance information. This guides the allocation to global asset groups (equities, government bonds etc.), which is the most important level of decision. For the purposes of this document the optimal portfolios are constructed with a one-year horizon.

Which asset classes?

We look for investibility, size and liquidity. We have chosen to include equities, bonds (government, corporate investment grade and corporate high-yield), REITs to represent real estate, commodities and cash (all across a range of geographies). We use cross-asset correlations to determine which decisions are the most important.

Neutral allocations and policy ranges

We use market capitalisation in USD for major benchmark indices to calculate neutral allocations. For commodities, we use industry estimates for total ETP market cap + assets under management in hedge funds + direct investments. We use an arbitrary 5% for the combination of cash and gold. We impose diversification by using policy ranges for each asset category (the range is usually symmetric around neutral).

Expected/projected returns

The process for estimating expected returns is based upon yield (except commodities, of course). After analysing how yields vary with the economic cycle, and where they are situated within historical ranges, we forecast the direction and amplitude of moves over the next year. Cash returns are calculated assuming a straight-line move in short term rates towards our targets (with, of course, no capital gain or loss). Bond returns assume a straight-line progression in yields, with capital gains/losses predicated upon constant maturity (effectively supposing constant turnover to achieve that). Forecasts of corporate investment-grade and high-yield spreads are based upon our view of the economic cycle (as are forecasts of credit losses). Coupon payments are added to give total returns. Equity and REIT returns are based on dividend growth assumptions. We calculate total returns by applying those growth assumptions and adding the forecast dividend yield. No such metrics exist for commodities; therefore, we base our projections on US CPI-adjusted real prices relative to their long-term averages and views on the economic cycle. All expected returns are first calculated in local currency and then, where necessary, converted into other currency bases using our exchange rate forecasts.

Optimising the portfolio

Using a covariance matrix based on monthly local currency total returns for the last 5 years and we run an optimisation process that maximises the Sharpe Ratio. Another version maximises Return subject to volatility not exceeding that of our Neutral Portfolio. The optimiser is based on the Markowitz model.

Currency hedging

We adopt a cautious approach when it comes to currency hedging as currency movements are notoriously difficult to accurately predict and sometimes hedging can be costly. Also, some of our asset allocation choices are based on currency forecasts. We use an amalgam of central bank rate forecasts, policy expectations and real exchange rates relative to their historical averages to predict the direction and amplitude of currency moves.

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Definitions of data and benchmarks for Figure 3

Sources: we source data from Datastream unless otherwise indicated.

Cash: returns are based on a proprietary index calculated using the Intercontinental Exchange Benchmark Administration overnight LIBOR (London Interbank Offer Rate). The global rate is the average of the euro, British pound, US dollar and Japanese yen rates. The series started on 1st January 2001 with a value of 100.

Gold: London bullion market spot price in USD/troy ounce.

Government bonds: Current levels, yields and total returns use Datastream benchmark 10-year yields for the US, Eurozone, Japan and the UK, and the Bank of America Merrill Lynch government bond total return index for the World and Europe. The emerging markets yields and returns are based on the Barclays Bloomberg emerging markets sovereign US dollar bond index.

Corporate investment grade (IG) bonds: Bank of America Merrill Lynch investment grade corporate bond total return indices, except for in emerging markets where we use the Barclays Bloomberg emerging markets corporate US dollar bond index.

Corporate high yield (HY) bonds: Bank of America Merrill Lynch high yield total return indices

Equities: We use MSCI benchmark gross total return indices for all regions.

Commodities: Goldman Sachs Commodity total return indices

Real estate: FTSE EPRA/NAREIT total return indices

Currencies: Global Trade Information Services spot rates

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