OLDMUTUAL

MARKET MATTERS

CLIMATE CHANGE COMPLEXITIES

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The scientific consensus is that climate change is real and getting worse. The goal for policymakers, activists, business leaders and investors meeting at the United Nation's COP26 summit in Glasgow is to limit the damage. Specifically, the aim is to keep the increase in average global temperatures to 1.5C above pre-industrial levels.

It is not clear whether enough will be done at COP26 to achieve this goal, but modelling and forecasting something as complex as climate over several decades comes with uncertainty. We also cannot predict technological developments. In the end, it is probably technology, more than policy, that will save our planet. At the best of times, politicians are reluctant to inflict short-term pain for long-term gain, even if long-term gain means saving our planet and our species.

But since this is an investment newsletter, we will highlight five considerations for investors: the impact of climate change, the cost of mitigation, the role of ESG, investment opportunities, and finally some South Africa-specific implications.

THE DAMAGE TO BE DONE

A 1.5C rise might sound benign, but it is not. Should the planet get there – and at this stage we are well on our way to overshooting the target – weather conditions could get much more extreme. More storms, more fires, more floods and more droughts. Even, somewhat ironically, colder and more severe winters in places. This has an economic impact beyond the direct damage. Stable weather patterns play a big role in economic activity, most notably in the case of agriculture. While food production is a relatively small slice of the global economy these days, every human needs to eat. But there are other potential impacts as well. Industries rely on water, so droughts threaten farms and factories alike, as well as the many countries that rely on rivers as key transport arteries or sources of hydroelectricity.

Historically, a hurricane here or flood there has not impacted long-term investment returns, but this might change in unexpected ways as the frequency of these events increase.

There are other potential consequences, including the fact that most of the world's largest and most productive cities and most expensive real estate are coastal, and threatened by rising sea levels. Some island nations face complete destruction.

At the opposite end of the spectrum, many of the world's poorest people already live in the tropics and around deserts in North Africa and the Middle East. Higher temperatures can turn these places from unpleasant to inhospitable. Millions of people might migrate from warmer, poorer countries to colder, richer ones. Immigration is already a political hot potato in the latter group, as we saw in 2016 with the Brexit vote and election of Donald Trump.

Investors could also face a different sort of loss if their holdings in carbon-heavy assets become worthless (or stranded) in the face of changed regulations or consumer preferences.

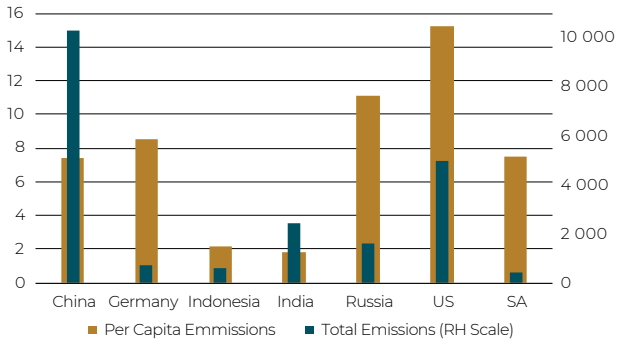
COSTS TO BE BORNE

The good news is that we know what to do to keep global temperatures from spiralling higher. The Energy Transitions Commission highlights six areas: ending deforestation and beginning reforestation; a rapid shift away from coal towards renewable sources of electricity; electrification of road transport; a reduction in the emissions of methane - a much more potent but more transient greenhouse gas than carbon; increasing energy efficiency across the economy, particularly in buildings; and shifting to greener production methods in carbon-heavy industries like chemicals, steel and cement.

The bad news is that agreeing on how to do all this is difficult. Much like Covid-19, climate change doesn't stop at national borders. Each country is affected by the choices of all the others. Moreover, there is a cost to mitigating climate change. It is a cost worth bearing, but it is a cost nonetheless. Who should bear it is the big question.

Consider for instance that China is currently the biggest carbon emitter, followed by the US, India and Russia. However, since carbon remains in the atmosphere for a long time, total carbon cumulative emissions need to be taken into account. Measured cumulatively from 1850, the US is far ahead and countries like Britain, Germany and France feature heavily. Even though European countries emit less carbon than they used to, the damage of past emissions remains.

CHART 1: ANNUAL CARBON EMISSIONS OF SELECTED COUNTRIES (TONNES)



Source: World Bank

Poorer countries tend to emit much less carbon on a per person basis. China might be the biggest current emitter, but its emissions per person are half that of the US. India's is a fifth of France's, and Senegal's almost a tenth of Sweden's.

Therefore, richer countries who emit more per person and have done so for longer should take the lead, but clearly progress will be limited without the big developing countries like China, India, Indonesia and indeed South Africa. Whether voters and taxpayers in the rich countries fully accept this responsibility is another matter.

PUTTING A PRICE ON IT

Economists have for years argued that carbon should be priced in a way that reflects its externalities. Carbon emitters don't pay nature to absorb their waste product in the same way you or I pay the municipality to remove our refuse. They also don't compensate people who get sick from pollution. If polluters had to pay the full cost, they would have a stronger incentive to sharply reduce emissions. As a portion of the cost would be passed on to consumers, they too would have an incentive to be more selective in what they consumed.

The World Bank estimates that 21% of global emissions are now covered by some form of carbon pricing mechanism, including taxes and carbon trading schemes. This is a start, but not enough.

South Africa imposed a carbon tax last year, but the starting amount is low at R120 per tonne (rising 10% per year) and coverage is limited. In contrast, the International Monetary Fund has proposed a global minimum of $75 per tonne. It would be a hard sell politically, and therefore unlikely in the short-term.

The cost of producing solar and wind energy has declined rapidly, and it is now cheaper than a new coal-fired power plant on an all-in basis. However, steel and cement produced through green processes are still more expensive than the 'dirty' alternative. Electric vehicles have also tended to be more expensive than those with internal combustion engines, but this is changing.

As for oil and other fossil fuels, prices may well rise instead of fall during the transition period if supply falls faster that demand. This is because it is easier for regulators or investors to pressure the handful of oil companies not to invest in new capacity than it is to convince hundreds of millions of consumers to drive or fly less. Only higher prices will be persuasive. Unfortunately, higher prices hurt poorer people within and across countries, as they tend to spend a greater portion of their incomes on fuel and other raw materials. It could also add to inflationary pressures, but not necessarily, since inflation is not the same as "expensive".

ESG: NOT EASY, SIMPLE OR A GIVEN

Applying environmental, social and governance (ESG) factors to investing rapidly moved from fringe to mainstream in the past two or so years. This is a good thing, but many investors seem to gloss over the complexities, trade-offs and potential for unintended consequences.

For instance, restrictions on funding new coal-fired power stations limits the ability of a poor but coal-rich country like Mozambique to achieve reliable energy supply, but leaves Germany's existing coal-fired plants intact. This amounts to prioritising the 'E' over the 'S', while a truly sustainable outcome would be one where jobs and social development are also taken into account within and across countries.

Negative screening, where investors refuse to invest in certain types of companies, is also easier in global markets than in a small market like South Africa where there are far fewer shares to begin with. But screening also has pitfalls, as investors have less ability to hold company management to account if they aren't shareholders. Moreover, the pressure to clean up falls on listed companies while privately held companies can completely escape scrutiny. It might be better in some respects to keep fossil fuel production "inside the tent" where it can be monitored than to force listed companies to divest from fossil fuels.

A final example of complexity is nuclear. Since it creates toxic waste, it is often assumed to fall foul of ESG standards. But it also provides low-carbon baseload electricity and might have to play a big role in complementing renewable sources.

ESG can easily become a tick-box exercise, but solving complex problems such as climate change requires that investors apply their minds to the issues holistically, not just focusing on the easy bits.

OPPORTUNITIES ABOUND

Trillions of dollars will have to be spent over the next three decades to avoid catastrophic climate change. Again, who pays is a tough question, but it will clearly create massive investment opportunities.

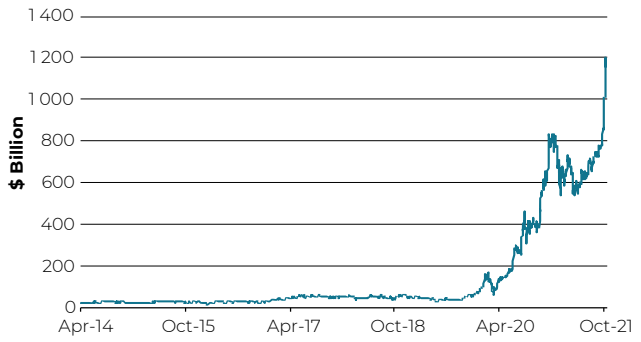
A few examples: Much of this spending will be on physical infrastructure such as electrical grids that will require commodities like steel and copper. The use of batteries will also have to expand substantially in vehicles, but also for buildings and even entire electrical grids. This will require large amounts of lithium, cobalt and nickel.

Then there will be investment in new processes and technologies, for instance greener ways of producing cement, better ways of insulating buildings, or new ways of food production, given the potential loss of arable land. There is also the potential for hydrogen to be applied as a fuel source for heavy transport, provided it is produced using green energy.

In fact, one of the big challenges for investors in the next decade or two might be to sift through the hype and identify the genuine opportunities. Throughout history investors have always become very excited at the prospect of a big theme or narrative and end up throwing caution to the wind and overpaying. The "green revolution," necessary as it is, might just end up being another such a narrative.

One example where investors are already very excited is Tesla, the electric vehicle company run by South African-born Elon Musk. In two years Tesla's market value has increased from $58 billion to more than $1 trillion. It is worth more than all other listed auto companies combined. By making electric vehicles desirable, Musk might have done more for combating climate change than most politicians at COP26. But Tesla's extreme price moves suggest investors might be getting ahead of themselves.

CHART 2: TESLA MARKET VALUE, US$

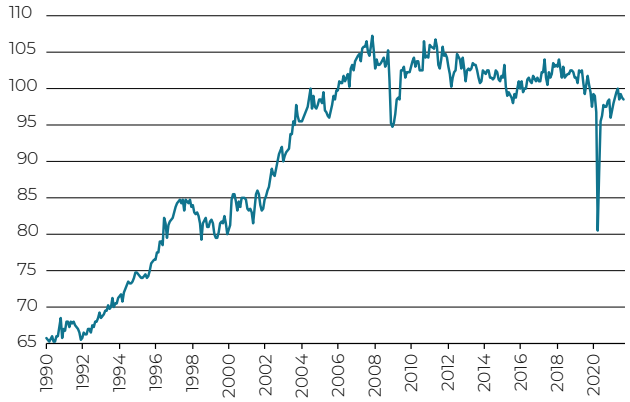


Source: Refinitiv Datastream

DO IT WHILE THE GLASGOW-ING IS GOOD

Finally, there is the case of South Africa specifically. Renewable energy sceptics will often point out its intermittency (the wind doesn't always blow, the sun doesn't always shine), but in South Africa's case, coal is even less reliable because most of Eskom's power stations are very old and prone to breakdowns. Total electricity production has not grown in 16 years.

CHART 3: SOUTH AFRICA ELECTRICITY PRODUCTION INDEX



Source: StatsSA

We therefore desperately need new sources of energy, irrespective of climate considerations, but South Africa (through Eskom) also happens to be the world's biggest emitters of carbon. If we don't reduce emissions voluntarily, other countries will eventually slap hefty carbon tariffs on our exports, effectively locking us out of those markets.

However, being one of the worst emitters also means it is easier and cheaper for us to substantially reduce carbon emissions, than for rich countries. It is a win-win for them to support us to do so. Therefore, the South African government's agreement with the US, UK, France and Germany is good news. It will mobilise $8 billion over three years in loans, grants, guarantees and private funding to invest in green energy capacity in exchange for Eskom bringing forward the decommissioning of its old coal-fired power stations. Being basically broke, Eskom will struggle to fund this on its own.

The details still need to be hammered out, and this amount will not be enough by itself, but it is an encouraging start. Other such agreements are likely to follow. A major part of the plan is to ensure a "just" transition that creates economic alternatives for the coal-producing areas of Mpumalanga and elsewhere.

South Africa remains a major producer and exporter of coal, and will continue to be for several years, but coal will eventually be phased out here and abroad. On the plus side, the country is the biggest producer of chrome and manganese, key metals in the global green transition.

COPING WITH COMPLEXITY

In summary, though progress has been made at COP26, it has not been enough to solve what is a very complex problem. An unpredictable world is likely to become more so, something investors will need to counter with patience and sensible diversification. But there will also be opportunities for investors, policymakers and countries, as there always are with change.

EQUITIES - GLOBAL

DESCRIPTION	INDEX	CURRENCY	INDEX VALUE	WEEK	MONTH-TO-DATE	YEAR-TO-DATE	1 YEAR
Global	MSCI World	US$	3 232.0	1.80%	1.80%	20.15%	31.01%
United States	S&P 500	US$	4 698.0	2.02%	2.02%	25.08%	33.85%
Europe	MSCI Europe	US$	2 105.0	1.49%	1.49%	14.40%	28.67%
Britain	FTSE 100	US$	9 860.0	-0.48%	-0.48%	11.68%	26.98%
Germany	DAX	US$	1 748.0	2.34%	2.34%	2.32%	25.94%
Japan	Nikkei 225	US$	261.1	3.05%	3.05%	-6.63%	12.10%
Emerging Markets	MSCI Emerging Markets	US$	1 264.0	-0.08%	-0.08%	-2.09%	8.40%
Brazil	MSCI Brazil	US$	1 455.0	1.89%	1.89%	-22.44%	-2.48%
China	MSCI China	US$	89.9	-2.21%	-2.21%	-17.06%	-16.80%
India	MSCI India	US$	859.0	2.17%	2.14%	27.26%	48.10%
South Africa	MSCI South Africa	US$	467.0	2.41%	2.41%	3.78%	13.08%

EQUITIES - SOUTH AFRICA (TOTAL RETURN UNLESS INDICATED OTHERWISE)

DESCRIPTION	INDEX	CURRENCY	INDEX VALUE	WEEK	MONTH-TO-DATE	YEAR-TO-DATE	1 YEAR
All Share (Capital Only)	All Share (Capital Index)	Rand	67 825.0	0.53%	0.53%	14.17%	22.82%
All Share	All Share (Total Return)	Rand	10 996.0	0.54%	0.54%	18.66%	27.92%
JSE Capped SWIX	Capped SWIX (Total Return)	Rand	28 114.0	0.99%	0.99%	21.26%	31.58%
TOP 40/Large Caps	Top 40	Rand	9 866.0	0.51%	0.51%	16.87%	25.43%
Mid Caps	Mid Cap	Rand	19 198.0	0.81%	0.81%	26.58%	37.40%
Small Companies	Small Cap	Rand	25 990.0	0.34%	0.34%	51.36%	75.61%
Resources	Resource 20	Rand	4 676.7	-2.58%	-2.58%	14.44%	29.98%
Industrials	Industrial 25	Rand	18 344.0	2.42%	2.42%	16.53%	16.38%
Financials	Financial 15	Rand	9 206.0	1.69%	1.69%	21.98%	45.46%
Listed Property	SA Listed Property	Rand	1 563.6	2.34%	2.33%	27.12%	60.53%

FIXED INTEREST - GLOBAL

DESCRIPTION	INDEX	CURRENCY	INDEX VALUE	WEEK	MONTH-TO-DATE	YEAR-TO-DATE	1 YEAR
US Aggregate Bond Index	Bloomberg Barclays	US$	538.5	0.70%	0.70%	-3.63%	-1.14%

FIXED INTEREST - SOUTH AFRICA

DESCRIPTION	INDEX	CURRENCY	INDEX VALUE	WEEK	MONTH-TO-DATE	YEAR-TO-DATE	1 YEAR
All Bond	BESA ALBI	Rand	806.5	1.38%	1.38%	6.26%	10.21%
Government Bonds	BESA GOVI	Rand	795.9	1.37%	1.37%	6.13%	10.11%
Inflation Linked Bonds	BESA CILI	Rand	297.7	-0.55%	-0.55%	9.84%	14.32%
Cash	STEFI Composite	Rand	479.4	0.07%	0.07%	3.19%	3.78%

COMMODITIES

DESCRIPTION	INDEX	CURRENCY	INDEX VALUE	WEEK	MONTH-TO-DATE	YEAR-TO-DATE	1 YEAR
Brent Crude Oil	Brent Crude ICE	US$	82.7	-1.17%	-1.50%	59.12%	101.80%
Gold	Gold Spot	US$	1 818.0	1.96%	1.96%	-4.01%	-5.21%
Platinum	Platinum Spot	US$	1 037.0	1.37%	1.37%	-3.08%	17.31%

CURRENCIES

DESCRIPTION	INDEX	CURRENCY	INDEX VALUE	WEEK	MONTH-TO-DATE	YEAR-TO-DATE	1 YEAR
ZAR/Dollar	ZAR/USD	Rand	15.04	1.43%	1.44%	-2.30%	4.35%
ZAR/Pound	ZAR/GBP	Rand	20.32	2.66%	2.66%	-1.18%	1.53%
ZAR/Euro	ZAR/EUR	Rand	17.41	0.95%	0.95%	3.08%	6.58%
Dollar/Euro	USD/EUR	US$	1.16	0.00%	-0.34%	5.34%	1.72%
Dollar/Pound	USD/GBP	US$	1.35	1.41%	1.48%	1.48%	-2.96%
Dollar/Yen	USD/JPY	US$	0.01	-0.54%	-0.54%	9.76%	9.58%

Source: I-Net, figures as at 05 November 2021

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