INDEPENDENT STRATEGY

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THE VIRTUOUS GAME

While the green revolution continues to gather steam, there is still a high degree of procrastination going on. The radical transformation of the economy that is required could be happening much faster, divestment from the old and damaging carbon economy could be made more quickly. There are plenty of economical alternatives. New carbon investment is not required, but it continues to be subsidised. This gradualism will result in more capital destruction over the medium-term — the irony of a strategy that seeks to minimise up-front costs.

Thankfully, technology is moving the world's way. So are investors. Capital will continue to fl ow into the green sectors, new innovations will improve mankind's toolchest and we will eventually get to the grail of net zero emissions. That will happen irrespective of political will (although that is certainly helpful, for example the Next Generation EU programme) and the best efforts of incumbents to rinse the fi nal carbon dollars out of the system.

The problem is the damage already done and the course this has set us on. It is not going to be turned by net zero. Reversing course might mean centuries of effort, certainly many decades. But this creates more opportunities for greened investors — catching up always being more costly.

Global governments are likely to make a new raft of commitments at the COP26 climate summit in Glasgow this November. It will be billed as another step forward towards net zero emissions and a sustainable planet. And it should be greeted with some renewed hope. But political progress shouldn't be allowed to distract us from reality. Even if the most progressive commitments are met, it's unlikely to move the dial on the planet's climate trajectory through the end of this century. And that is the critical part. As it stands, the rate of warming is incompatible with how the global economy (currently) functions.

This is due to what we have already baked into our climate cake. Greenhouse gas emissions (a diverse bunch, of which we'll focus on carbon dioxide or CO_2) might have peaked in the advanced economies, but this accounting methodology does not refl ect their total contribution — via fi nal demand — to climate chemistry. Outsourcing production to far-away places, with lax environmental standards, has contributed greatly to this plateauing.

One only has to see how China's emissions soared after its entry to the WTO (Figure 1) to see how pollution has been re-jigged rather than removed. And the apparent stabilisation of Chinese carbon dioxide emissions more recently isn't the silver bullet either — global emissions as a whole continue to rise, refl ecting the widening breadth of development across emerging economies.

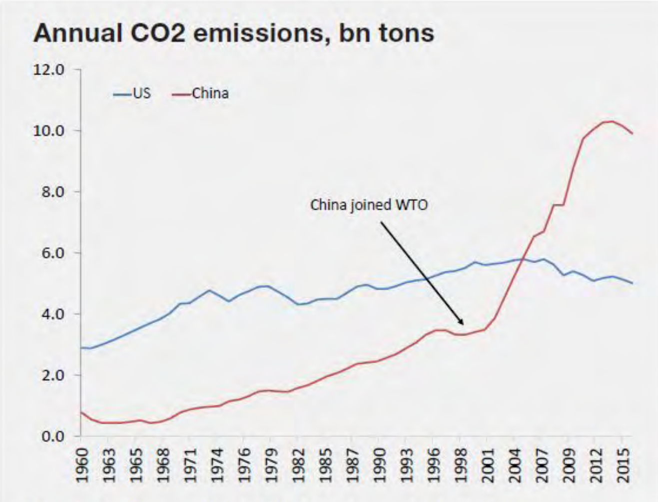

Figure 1. *Source: World Bank, Independent Strategy*

This reveals a fundamental contradiction between what we need for a sustainable planet and economic development, particularly the convergence between developing and advanced economy living standards. And of course, the more glaring (moral) contradiction between western wealth (and its continued rise) and the poverty that is still endemic in many parts of the world. It is, after all, carbon that has lifted us to our comfortable position.

None of the promises that the advanced countries make consider these externalities in full. Indeed, for the most part the pledges to rein in greenhouse gas emissions are still allocated to avoid prejudicing our supply chain partners. This serves all governments' shorter-term interests. Emerging economies' development and growth paths are not hindered by the imposed climate goals and the greening of the advanced nations which can continue to be determined by technological progress and the virtuous economic cost curves these deliver. Lifestyles continue to gradually improve everywhere. And the rich are not burdened with accusations of impeding development opportunities of the poor.

Such contradictions certainly hinder effective action though.

Is this an unfair accusation? Well based on current trajectories it isn't. Multilateral idealism looks totally misplaced.

As it stands, we've seen the concentration of CO_2 in the atmosphere rise at around 1.85ppm per year since 1980, but the pace of this has been accelerating as emissions have soared. Over the last fi ve years, atmospheric CO_2 concentrations have risen by an average 2.31ppm. But 1980 is a good starting point, as that's when warming really started to kick-in (Figure 2) and not long after the 'global warming' moniker was fi rst muttered. In other words, even with CO_2 levels only modestly above the pre-industrial range of 180-300ppm — it was 340ppm in 1980 — the planet had started on its warming path.

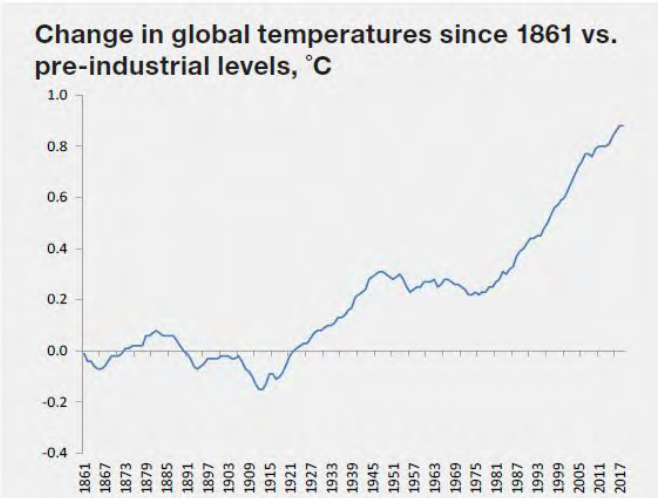

Figure 2. *Source: Met Office, Independent Strategy*

For context we're now at 415ppm, or 30% above pre-industrial levels (Figure 3) and the rate of change continues to increase. It's worth mentioning that the global average temperature in the 20th century was a bit below 14˚C. A degree, or even half a degree, matters a lot.

This reveals the real elephant in the room. Even if we can cut emissions by the amounts prescribed, why should we think that this would reverse the

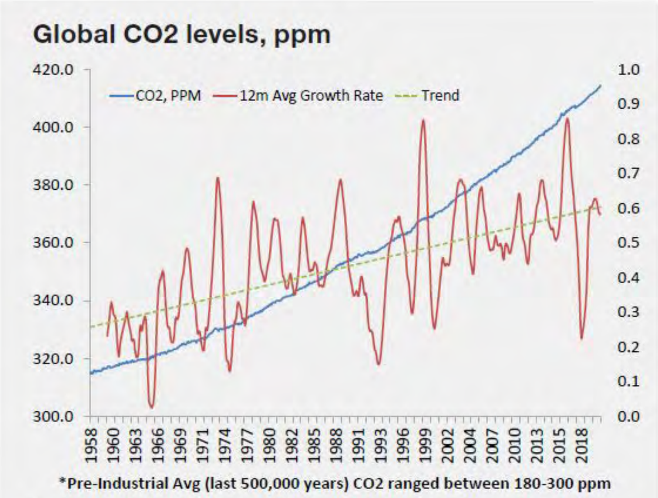

Figure 3. *Source: NASA, Independent Strategy*

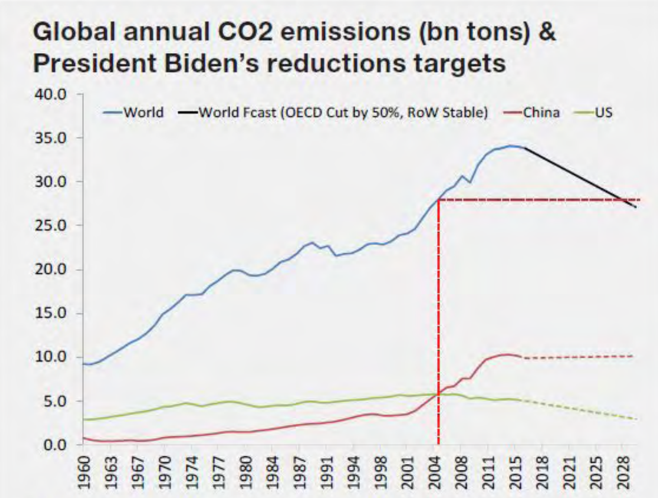

Figure 4. *Source: World Bank, Independent Strategy*

chemical changes made to the atmosphere and path of warming? And even if it did, could they be reduced at a sufficient rate to turn the climatic super tanker, before we get to temperatures that become not merely disruptive, but critical. It seems highly unlikely.

So, when it comes to acting on climate change, we are like the traffic accident where the deafening sound of screeching brakes and skidding tyres is heard after the baby has been Figure 3. Source: NASA, Independent Strategy run over; avoiding action usually happens after the damage is done. This reflects the amazing inability of big-brained humans to deal with threats beyond the immediate. That stunning weakness is proven time and time again by markets, politicians and even long-term corporate and other planners.

Suppose, for example, that the US and other OECD economies can attain Biden's pledge to reduce emissions to 50-52% of 2005 levels by 2030, which is probably the most we could realistically expect (2005 is not some arbitrary date, but the point at which US emissions peaked). Europe can probably do more, others will do less. And then make another huge assumption that EMs can maintain stable emissions through to then, before they too peak (which fits with China's existing pledge to cap its emissions at 2030 levels, if not before!) We'd still be looking at CO2 emissions of 28.5 gigatons per year at the end of the decade — not much better than where global emissions were back at Biden's 2005 starting point (Figure 4).

That rate of release has been contributing to a 2.3ppm (+0.6%) increase in the level of total CO2 in the atmosphere. Project Drawdown estimates around 41% of emissions are reabsorbed by the earth currently. But that capacity is degrading too. At this rate global CO2 would be 440-445ppm by the end of this decade, up from 416ppm today.

Such a rise could not break us from the warming trend that we are currently on, let alone return us to the below 2˚C and "preferably" 1.5˚C that everyone agreed to limit global warming to in Paris. And remember this is a defined limit, not a point in time marked upon a still rising trend.

Of course warming will not play out like this. Like concentrations of anything, the potency of CO2 in the atmosphere increases alongside its intensity, in a potentially merciless feedback loop. For example, a warmer earth leads to increased humidity, which locks in further heat. Melting glaciers and icecaps reveal more dark

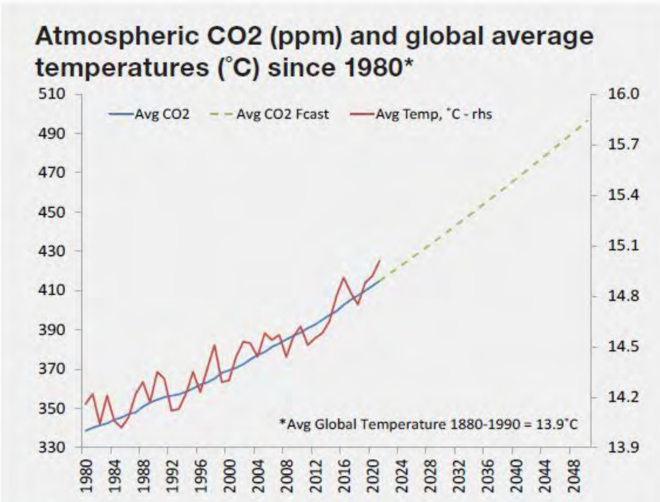

Figure 5. *Source: World Bank, Independent Strategy*

sea and earth, which in turn absorb more heat and warm the planet. You get the idea. And it takes time for the CO2 released to have its effect. The warming seen to date does not refl ect all of the damage we have already done. These factors will continue to impact well beyond 2030.

Indeed, atmospheric CO2 is likely to hit 500ppm as we move into the second half of this century, absent more comprehensive changes in behaviour. That would leave us at +2˚C by 2050 (Figure 5) and closer to +3.2 ˚C as the century draws to an end. This level of concentration will generate an even faster temperature rise thereafter, even with net zero. There are plenty of sophisticated climate models out there and they all tell the same story. None are hopeful. And critical ecological tipping points — such as the start of the collapse of the Greenland and Antarctic ice sheets —will move us further from the equilibrium level at which our natural environment can re-balance.

Cumulative emissions reveal the damage even more clearly. If we take our scenario of steady EM emissions and OECD emissions falling by a bit more than half by 2030, cumulative emissions would still be nearly a third higher than the current 1.2trn tons of CO2 emitted since 1960 (Figure 6). This is not a path that is compatible with sustainability.

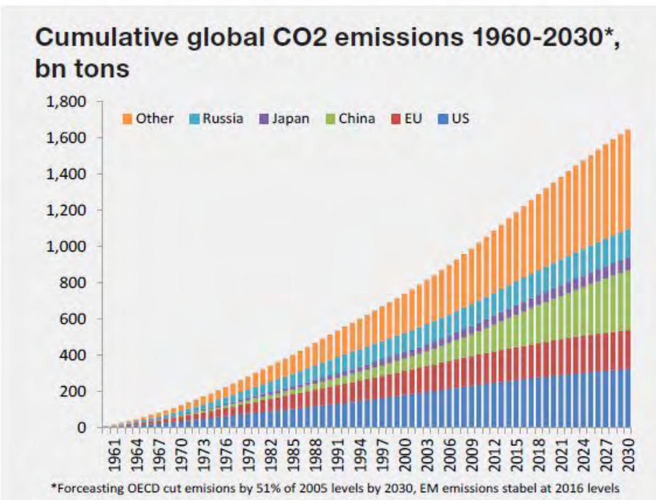

Figure 6. *Source: World Bank, Independent Strategy*

But this paper is not really about the numbers, however important they are to the story. The data is presented to merely reveal the scale of the task and the consequences of gradualist action over more rapid change. The climate debate is still one dominated by the incumbents, rather than the disruptors. Perhaps that's because there are still not enough disruptors, or because the path to sustainability is not deemed profi table enough, or our existing carbon economy is still too lucrative.

One only has to look at the level of subsidy the fossil fuel industry continues to enjoy, alongside the vocal criticism every green energy project gets when it is not profi table on day-one. The IMF thinks that post-tax global fossil fuel subsidies totalled 2.8% of global GDP as of the end of 2017, or $5.2trn (Figure 7). The post-tax fi gure is designed to refl e the environmental damage, although even the pre-tax sums run into the hundreds of billions per year. But it's the post-tax numbers that need to be squared against the sums currently committed to transitioning to a sustainable green economy. They reveal where the heavy lifting needs to be done.

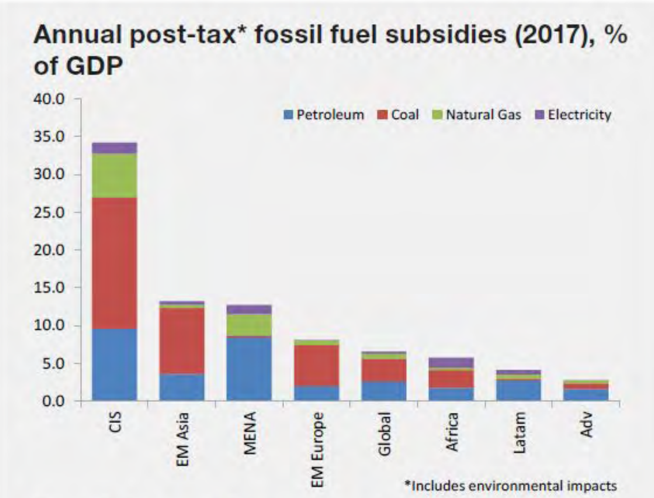

Figure 7. *Source: IMF, Independent Strategy*

Advanced economies only account for 25% of these subsidies in dollar terms. Plenty of the worst offenders, the CIS for example, are going to be tough to bring into the fold. Indeed, a warmer climate offers Russia – with 20% of its landmass in the Arctic circle — the opportunity to exploit more of its fossil fuel resources. Russia after all has little else to offer the world to pay for improving its living standards. And it remains to be seen whether MENA will be able to diversify before it is cooked.

Last weekend's G7 meeting is a case in point. Lots of warm words about protecting the environment but the biggest fear is still the risks to shorter-term growth.

The rise of ESG (environmental, sustainable, governance) investing equally seems slightly compromised in its objectives. Of course ESG is important. But each element represents a different type of issue, each of which are subject to their own differing interpretations. What does "sustainable" actually mean at a company level? Improved governance meanwhile is a broad catch all that is only loosely linked to the environment and sustainability.

True sustainability requires a reworking of the economic system. An improved corporate culture or refusal to deal with more nefarious regimes isn't going to stop a glacier sliding down a mountain. Instead, the risk is the ESG banner provides further cover for procrastination, helping investors feel better, fl attering them with an improved social reputation and potentially diluting the impact of the capital that is seeking out greener opportunities. A cynic might argue that this is another example of the existing system pushing back, but really, ESG is just the fi nancial sector tapping into, and extracting juicy fees from, the Zeitgeist. There is no real innovation, just a very good understanding of the failings of the human condition. The big winners are the unproductive lawyers and compliance offi cers who produce little and get paid a lot.

This being said, there are some promising signs. The Next Generation EU programme is heavily weighted towards investment in green technology. And it directs resources to countries that might have otherwise been starved of such capital. Italy in particular falls into this bucket; not only has it historically been constrained by its weak fi scal position, but its structural and political failings have often led to poor execution. That should now change. Being able to channel European spending in this way is undoubtedly positive and reinforces the European green investment theme we believe in (see our report The dark horse gallops, 27 May 2021).

We've also seen progress on the legal side of the ledger. For example, the German constitutional court ruled in May that the federal Climate Change Act is partly unconstitutional as it does not suffi ciently safeguard future generations from the impact of warming. And there have been several other legal cases where corporates and governments have been found to be in breach of their obligations. This looks to be a signifi cant change in how environmental responsibilities are allocated. Recognition of risks in places like China and India, or the other big and growing EM polluters, is far less likely in the short-term. One needs to hope that the legal tentacles of advanced economy courts can extend just as far as western demand for cheaply-produced goods.

The economic cost of screwing it up

What are the costs of doing nothing? Well, a lot. Unlike the hit created by a short-term crisis — such as a pandemic, which invariably passes — climate change delivers the ultimate in permanent scarring. Swiss RE has added up the hit to GDP we're looking at by mid-century and thinks that if the Paris targets are hit (well below 2˚C) then global GDP would be 'only' 4.2% smaller than it would have been with a stable climate. Mid-century global GDP is forecast to be around $173trn in 2020 prices, so 4.2% of that is $7.3trn, quite a lot. But if we get a 2˚C rise the hit jumps to -11% ($19trn). And the extreme case, which they model at 3.2˚C, GDP would drop by 18.1% ($31.1trn).

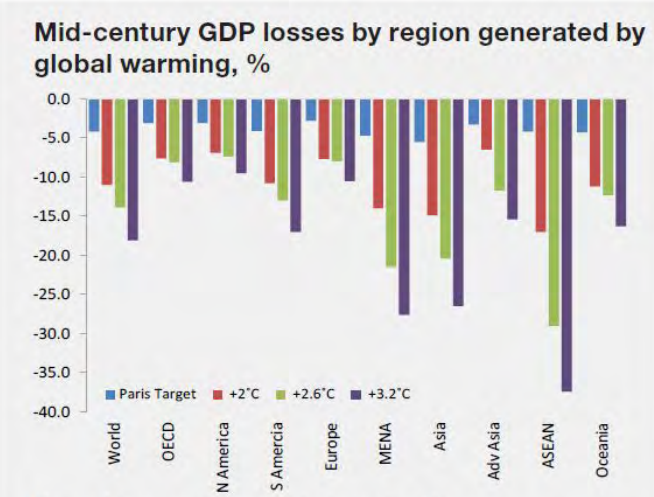

Figure 8. *Source: Swiss RE, Independent Strategy*

And this is a global average. Some places fare even worse, specifi cally ASEAN which could see a GDP hit of 37.4% in the 3.2˚C scenario (Figure 8). Luckily, after about 5-6˚C, which some models think is a probability moving into the next century, there are no further losses!

Part of the problem is that these kinds of scenarios are so bad that they incentivise people to gloss over them, a bit like all those CBO forecasts of US government debt to GDP heading through 200% in the coming decades, as the costs of an aging population wash through. That's a forecast, the here and now is real. But a planet can't go bust and refi nance like an economy can. So the need to disconnect from our usual short-termism is critical. We're optimistic it can happen. We're less optimistic it can happen in time, although that might actually be good for the theme in an investment sense, as it means the shift will have to be even more pronounced.