

Sovereign Sustainability Report 2022

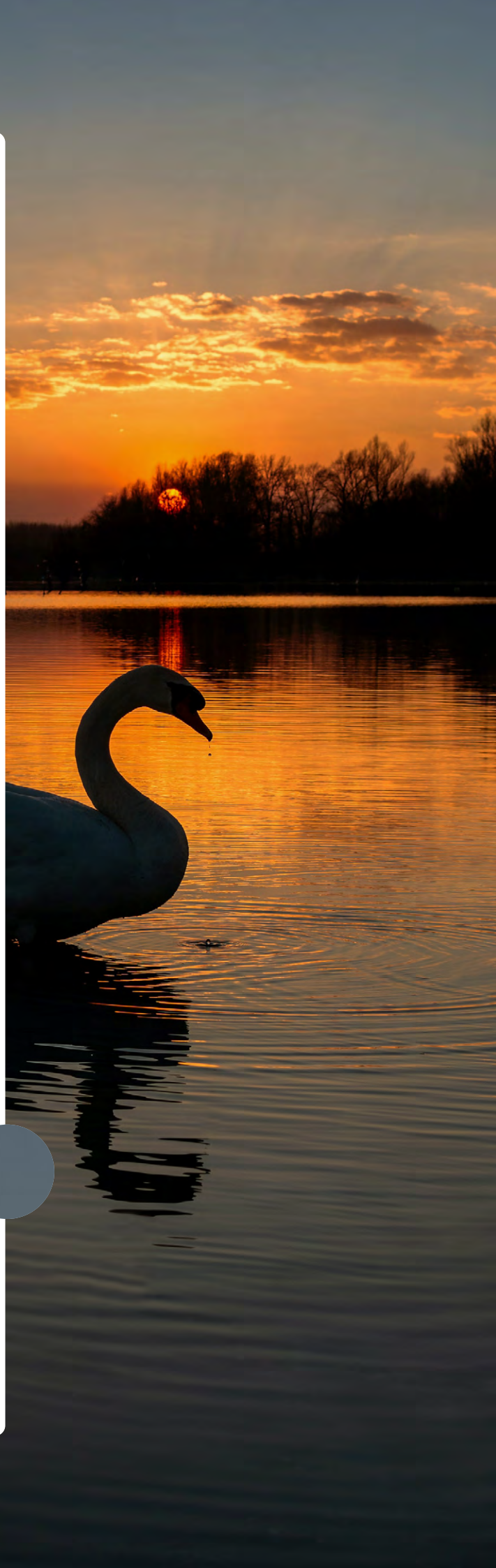
The age of the grey swan

- Autocracies vs Democracies
- Carbon Emissions
- Food Security
- Energy Transition



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Marketing communication



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Help with data analysis provided by

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Intro-

Introduction:

Sustainability in the

age of the grey swan.

Grey swan is a term used to describe a potentially very significant event whose possible occurrence may be predicted beforehand but whose probability is considered small'.

Drawing a Line on Dealing with Dictators...

Our sustainable strategies have often been in a minority with their clear stance against investing in the sovereign debt of autocracies.

Having rationalised the annexation of Crimea, many academics, politicians, and investors believed that as long as business is flowing, peace will be assured – after all, this was the founding idea of the European Union. Indeed, that principle has worked well for democratic societies, where the holders of office can always be replaced if they start putting their

own interests above those of their electorate. However, autocrats and dictators have little to fear when they subjugate their citizens to yet more hardships in order to preserve their own power. And yet, beyond that façade of short-term impregnability, lie great long-term vulnerabilities.

As we explained in 2020, when we outlined our reasons for applying a tail-risk hedge to our sovereign sustainability framework based on Candriam's democracy filter:

Totalitarian regimes of any kind are by their nature unsustainable, because of the level of physical and psychological violence needed to enforce restrictions. Freedom of thought and expression is necessary for real progress. Without it, the Human, Social, and Economic Capital of countries tends to stagnate and eventually disintegrate. This process is slow and often imperceptible in the short term; it played out over eight decades (1922–1991) with the Soviet Union and the Warsaw Pact. The reverberations from that collapse continue to echo in Europe to this day².

Less than two years later after this was published, the democratic Ukraine has been invaded by the autocratic Russia, causing a geopolitical shift and a Europe-wide energy crisis. It fuelled inflation globally and threatened food exports to many countries that depend on them.

Why did it take a war in Europe and unprecedented international sanctions for some to realise that doing business with Europe's biggest autocracy was not discouraging Putin's imperialistic ambitions? And why did investors need a yet another prolongation of the more authoritarian rule of President Xi Jinping to take a more realistic view of Chinese markets³?

Bill Browder, who was the largest foreign investor in Russia until 2005 and has been the driving force behind the Magnitsky legislation⁴ (providing sanctions against human rights abusers or those involved in significant corruption) across the world, told us that the root of the problem lies in investors ignoring sustainability factors relating to the rule of law and style of government (see the box).

Q: You have been very successful as an investor in Russia. Do you think, in retrospect, that you underestimated the risk of investing in an autocracy? And do you think that even despite the Russian aggression in Ukraine, Western democracies, their financial institutions, and their businesses, continue to generally underestimate that risk?

“I think that all investors completely ignore political risk when they look at emerging markets. People look solely at growth, valuations and in the case of sovereigns, ability to pay. Nobody thinks about rule of law, property rights, judicial independence, and other relevant [factors]. As a result, places like China are way overvalued. And of course, that’s why everyone lost their shirts in Russia.”

Bill Browder answers a question from Candriam, June 2022

The Russian aggression against Ukraine – preceded by the COVID-19 pandemic and an attempted coup in the US – is the latest of the grey swans that have turned into real-life calamities. The war has already brought up to the surface serious issues around food security, energy transition, geopolitics, and all that with the overarching global climate crisis.

The sustainability risk landscape is becoming more complex and interconnected. When Chinese military livefire drills are being carried out all around Taiwan⁵, one cannot help but draw parallels with Russian stance on Ukraine. Key resources for energy transition, such as rare earth metals, have historically been imported from China (up to 80% of US imports in 2019⁶), but recent events have put resource security on the forefront of the agenda of many governments.

...while helping to create a more sustainable world

Our civilisation faces two existential environmental threats: the climate crisis and the increasing inability of Earth's life-supporting systems to cope with the way our societies consume natural resources. To come up with solutions, the global economy and all its sectors, including the investment industry, will have to undergo fundamental changes. Redirecting capital flows away from unsustainable activities and towards sustainable long-term opportunities is both imperative and profitable.

Governments and regulators are gradually becoming bolder and more decisive in facilitating this process. For example, the EU's Sustainable Finance Disclosure Regulation (SFDR) helps identify and classify sustainable assets and investments,

including those crucial for achieving decarbonisation objectives or supporting social well-being and cohesion.

Investors also have an important role to play, such as monitoring and directing investment flows accordingly. Supporting governments in their efforts to decarbonise is just as important as nurturing technologies that make decarbonisation possible. Building a national consensus for decarbonisation can be achieved only if all key stakeholders, both public and private, do all they can to ensure a just transition to a more sustainable type of an economy, and not just in the most impacted communities. Only then can we succeed in making our economy, and investments more sustainable.



Redirecting capital flows away from unsustainable activities and towards sustainable long-term opportunities is both imperative and profitable.



Where do we go from here?

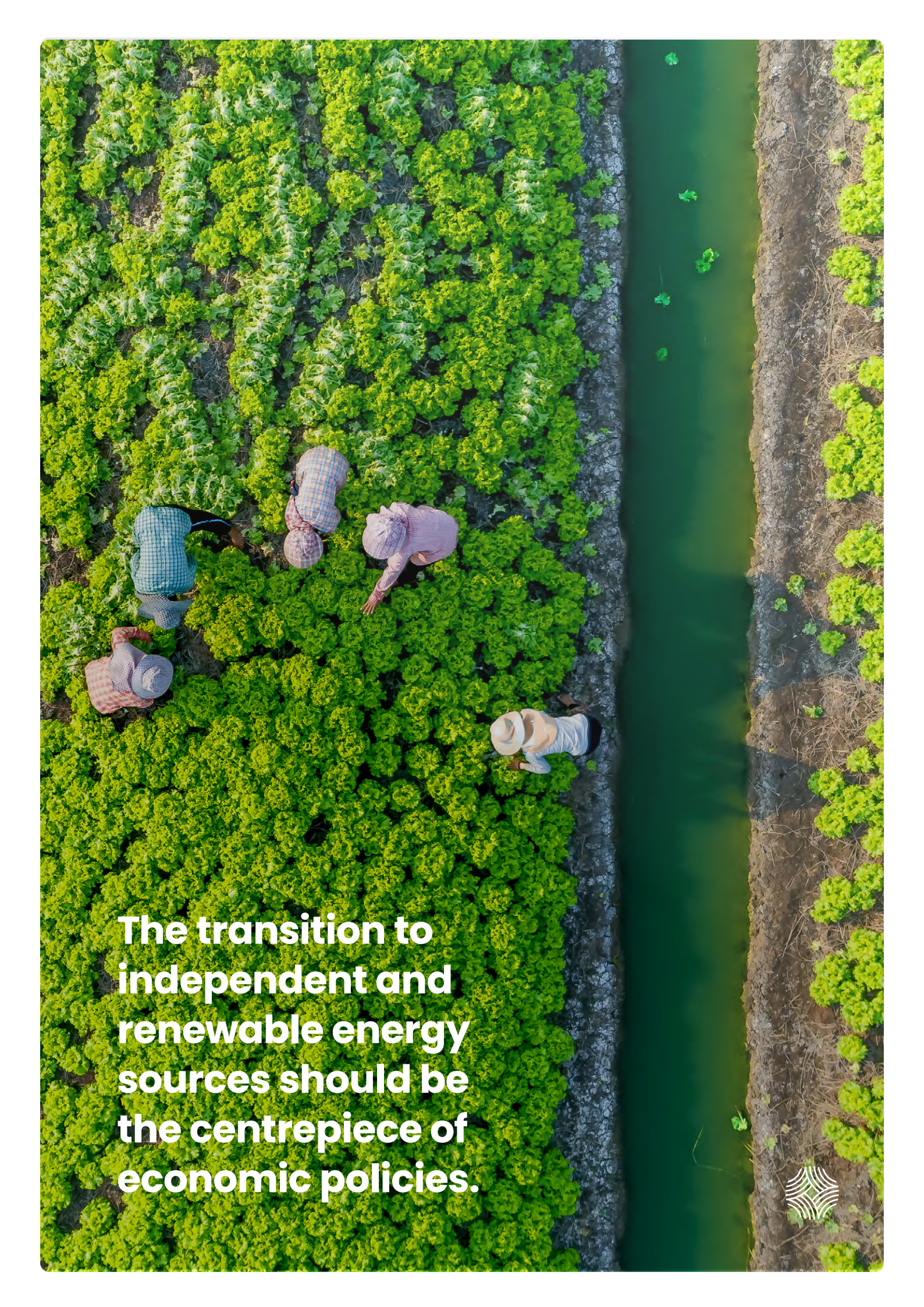
So how can investors use their important role to support global sustainability objectives, as well as better protect their portfolios from multiplying swans?

These risks and impacts can be addressed directly and the exposure to them managed better by directing investment flows towards countries that want to play a positive role in the international community, uphold democratic norms and human rights, and deal with the climate crisis. Our framework is designed to help identify such countries, and this report will take you through its key topical themes outlined below.

We constantly enhance our framework to ensure that our conclusions accurately reflect the global economy's ever-changing complexities and risks. The resulting changes and enhancements, the latest of which are described below, also mean that the resulting country scores do not present a basis for like-for-like comparisons with our previous reports.

- **Emissions** – we introduced our **new emissions model**, examining carbon footprint by industry and energy source, assessing the potential for Net Zero
- **Food production and security** – weaponisation of grain exports has added to pressures on our food supply chains, already strained by COVID restrictions, population growth, changing diets, and environmental impacts. Ahead of schedule, we **added a new subcomponent** to reflect **food production and supply, self-sufficiency, and ultimately food security**.
- **Democratic accountability** – with the world's autocracies and populist movements gaining ground and indulging in isolationism and deglobalisation, common solutions, dialogue, and cooperation seem hardest to achieve when they are most needed to cope with the climate emergency
- **Energy Transition** – energy security has risen to the top of the agenda of European governments, and the transition to independent and renewable energy sources should be the centrepiece of economic policies for the next decade. We **enhanced our Sectoral Energy Consumption sub-component** to better reflect the latest development.

As always, this is work in progress and your feedback is greatly appreciated.



The transition to independent and renewable energy sources should be the centrepiece of economic policies.



Investing in authoritarian regimes: because you have to?

The global economy is witnessing an expansion of authoritarianism across the world. As the Freedom House's 2022 report stated:

"The present threat to democracy is the product of 16 consecutive years of decline in global freedom. A total of 60 countries suffered declines over the past year [2021], while only 25 improved. As of today, some 38 percent of the global population live in Not Free countries, the highest proportion since 1997. Only about 20 percent now live in Free countries".

Does that mean that sovereign investors cannot avoid investing in autocratic regimes? And how are such investments expected to perform?

Countries classified as "Free" (by Freedom House) make up a minority among the issuers of EM sovereign debt. Autocracies have also seemed to offer higher yields on their debt, which many investors found irresistible. So, one may be forgiven for thinking that cutting out autocrats may deny too attractive benefits.

In fact, historically democracy and respect for human rights have had a positive impact on countries' economic performance^{8,9,10,11}, and hence their ability to repay their debt.

There are also additional risks when, as we saw with the Russian invasion of Ukraine in February 2022, autocracies go through periods of "irrational" behaviour when feeling threatened either internally or externally.

Timing such dangerous periods, or the ultimate collapse of a regime is virtually impossible, so to account for these risks we implemented Freedom House classifications as a tail-risk hedge for our framework.

An investment case.... ...that can be seen from space.

We have always tried to base all our analysis on reliable independent data from different sources – so that we could get a clearer picture of every issue.

However, it is more and more difficult to do because information warfare has increasingly penetrated a huge variety of media channels. Various disinformation campaigns targeted developed societies, aiming to promote polarisation, deepen divisions, nurture conspiracies and confusion^{12,13}. We only need to recall how often we heard the refusals to admit the seriousness of the COVID pandemic across the media. Over the past few years, disinformation has become more sophisticated. Reporters Without Borders summarised it best, when discussing the current state of press freedom globally:



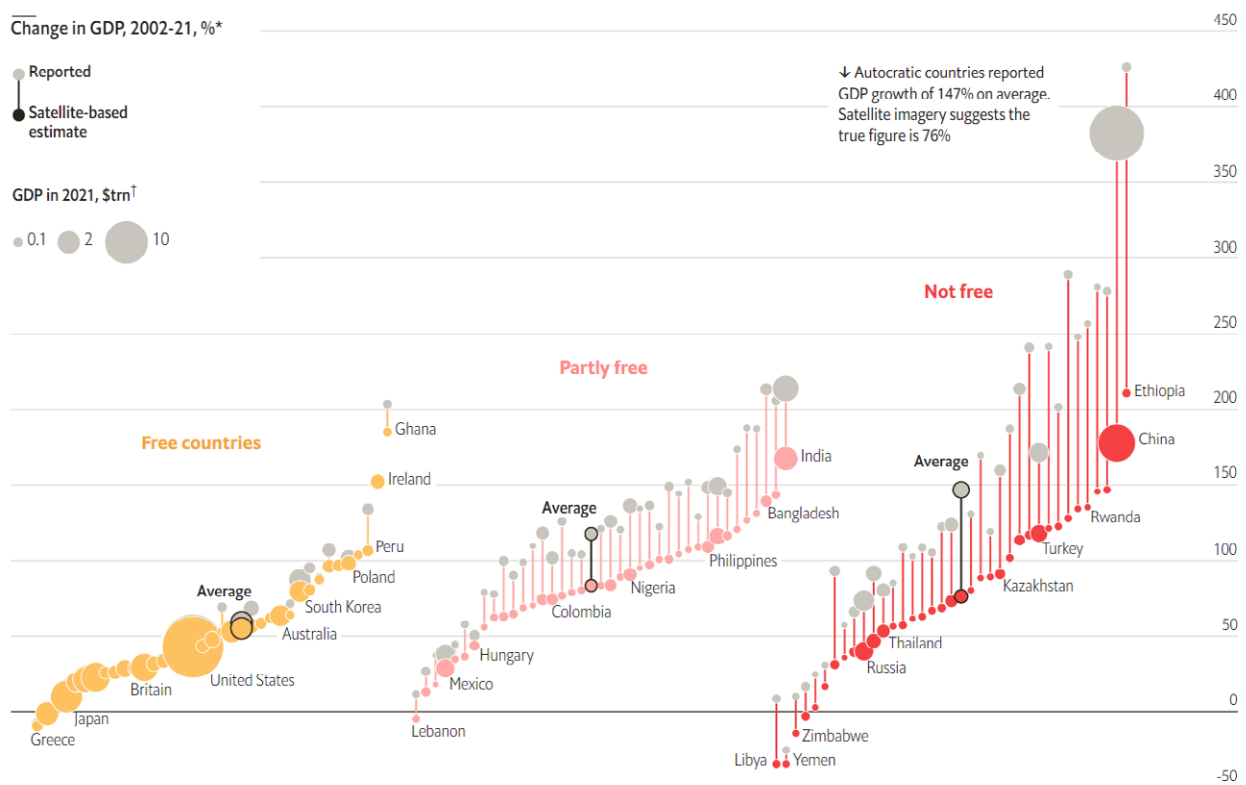
Within democratic societies, divisions are growing as a result of the spread of opinion media [...] and the spread of disinformation circuits that are amplified by the way social media functions. At the international level, democracies are being weakened by the asymmetry between open societies and despotic regimes that control their media and online platforms while waging propaganda wars against democracies. Polarisation on these two levels is fuelling increased tension.¹⁴

This phenomenon extends beyond the popular press and social media – in our previous white paper we pointed to the under-reporting of deforestation in Canada as one of the reasons why we rely on satellite imagery to assess this problem. And this under-reporting has been taking place in a developed country where the media is free to investigate and hold the authorities to account. This raises a legitimate question of how much we can trust the data reported by autocracies, where there is little or no media freedom.

A study of night-time lights (as captured by satellite imagery) was performed by Luiz Martinez from the University of Chicago, who used satellite images to examine the amount of night-time light growth as a proxy for GDP growth over time¹⁵. The author established that GDP growth reported by autocracies¹⁶ tended to be inflated by up to 35% per

annum. Over the long term, he reported annual numbers added up to amount to almost double the autocracies' actual economic growth. Interestingly, autocracies seemed to overstate their economic growth only once it exceeded the maximum eligibility level for international assistance programs.

Figure 1:
Change in GDP, 2002-2021



*In 2021 USD at market exchange rates, assuming reported 1992 GDP figures are accurate.
+Countries with over 5 million people, freedom status in 2021.
Source: The Economist, 1-7 October 2022, p.77; "How much should we trust the dictators' GDP growth estimates?", L.R. Martinez, 2022; Freedom House; World Bank.

Some investors' common "wisdom" has been that the high yields often offered by autocracies on their sovereign debt is a good way to earn carry. Naturally, if you believe in the long-term sustainability of such returns, strict tail-risk hedges that exclude such investment opportunities could result to inferior performance over time.

However, over the long term, the total returns of sovereign debt are driven mainly by economic growth indicators, and Martinez's GDP study put a big question mark on the reliability of such indicators.

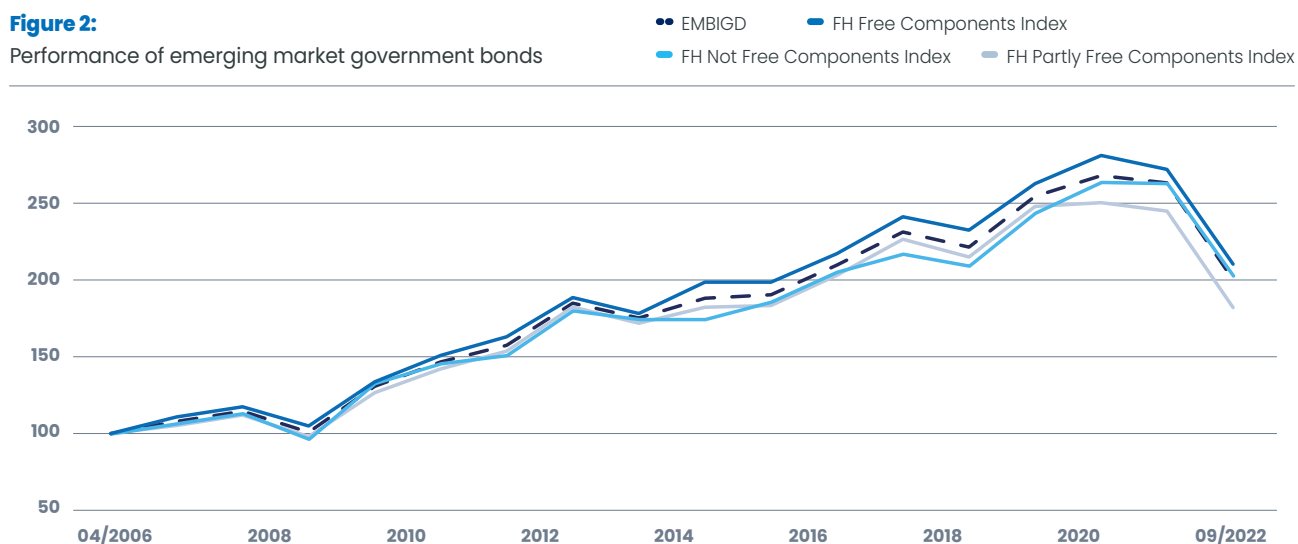
Looking at investment performance

Let's examine the returns of the JP Morgan Emerging Markets Bond Index Global Diversified™ index (EMBIGD) since 2006 – this was the earliest when we could obtain reliable data on government bond yields, the index composition, and bond returns.

We divided this investment universe into three groups using Freedom House's historical country

classifications – Free (F), Partially Free (PF), and Not Free (NF). Freedom House's country classifications were also used in Martinez's study and, in fact, are freely available to anyone wishing to conduct their own, independent analysis¹⁷.

Figure 2:
Performance of emerging market government bonds



Past performance is not a guide to future performance.
Source: Bloomberg, Factset, Candriam as at 30.09.2022.

Figure 2 shows that “Free” countries outperformed the broader emerging market universe, represented by the EMBIGD, while “Partly Free” and “Not Free” countries lagged the index for most of the period. However, none of these two country groups had consistently outperformed the other.

On an annualised basis, “Free” countries outperformed the index by 0.31% a year over the 16-year period, while the “Partly Free” countries underperformed the index by 0.61%. The “Not Free” were broadly in line with the index, outpacing it by just 0.09%, mainly due to the last couple of years.

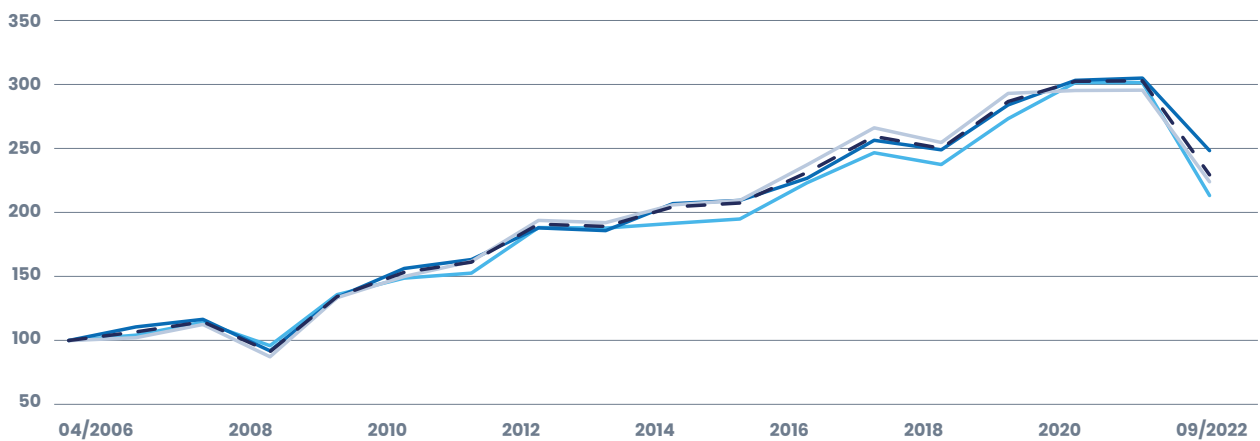
If we use an equally weighted index to avoid biases related to index weights, the differences in performance are more pronounced in times of market stress. This is mainly due to the “flight to quality” that are characteristic during such periods.

“Free Countries” outperform the equally weighted index by 0.51%, “Partly Free” underperformed by 0.15% and “Not Free” underperformed by 0.47% per annum over the 16-year period.

Figure 3:

Performance of equally weighted EMBIGD components

•• EW EMBIGD EW FH Free Components Index
 EW FH Not Free Components Index EW FH Partly Free Components Index



Past performance is not a guide to future performance. This historical simulation is used for illustration purposes only.

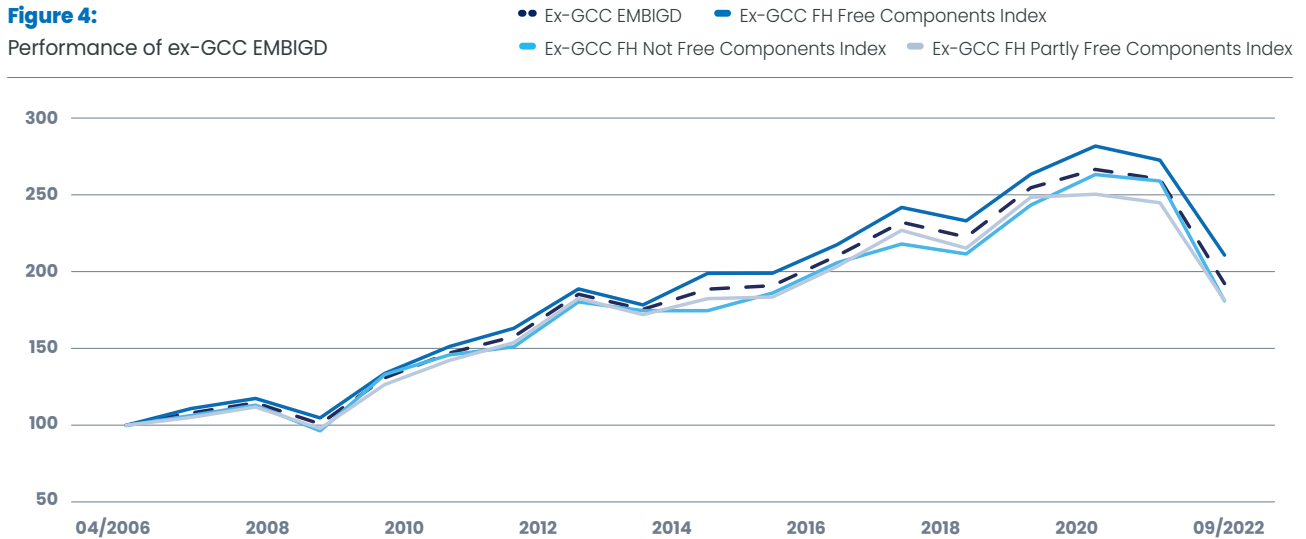
Source: Bloomberg, Factset, Candriam as at 30.09.2022

The recent strong performance of oil-exporting “Not Free” countries has clearly benefitted from a rise in oil prices. The over-reliance on fossil fuels of some economies excludes them from sustainable strategies due to an excessively high carbon footprint. Furthermore, the definition of “Emerging Market” seems to encompass a very broad category of countries as it includes some of the world’s poorest nations, as well as some of the wealthiest. For the sake of argument, if we exclude the Gulf Cooperation Council countries (Bahrain, Kuwait,

Oman, Qatar, Saudi Arabia, and UAE) from the index since all of them (apart from Oman) have higher GDP per capita than Greece¹⁸, and Qatar has a higher GDP per capita than Germany and the UK¹⁹, then the relative performance of the “Not Free” countries is on par with “Partly Free” countries. Both “Partially Free” and “Not Free” countries underperform the modified index by 0.37% per annum, while “Free” countries outperform by 0.59% over the same period.

Figure 4:

Performance of ex-GCC EMBIGD



Past performance is not a guide to future performance. This historical simulation is used for illustration purposes only.

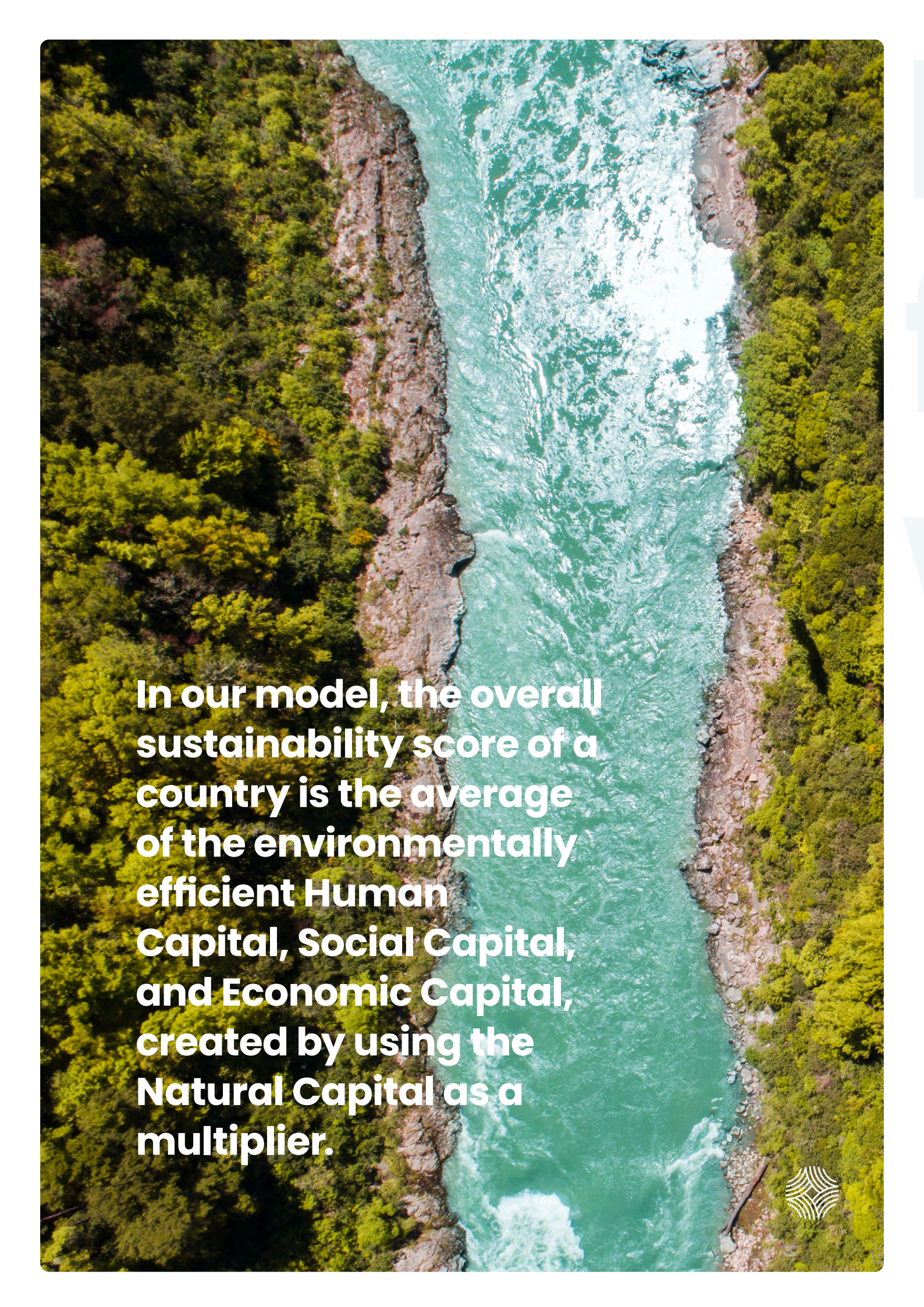
Source: Bloomberg, Factset, Candriam as at 30.09.2022.

Autocracies' GDP Growth: Putting to the Test

Our historical simulation has confirmed that the relative performance of a sovereign portfolio can potentially be improved by excluding issuers based on minimum eligibility thresholds, such as civil liberties (CL) and political rights (PR),²⁰ particularly on an equally weighted basis.

Our results confirmed the conclusions of Martinez's night-time lights study, as well as our conviction that

excluding autocracies should not adversely impact the performance of a sustainable government bond portfolio. They also show that it is not very often that autocracies present "unmissable" investment opportunities, as recently has been powerfully demonstrated by Russian sovereign debt.

An aerial photograph of a vibrant turquoise river flowing through a dense, lush green forest. The river is the central focus, with white rapids and turbulent water. The surrounding forest is thick and green, with some rocky banks visible. The overall scene is a natural, scenic landscape.

In our model, the overall sustainability score of a country is the average of the environmentally efficient Human Capital, Social Capital, and Economic Capital, created by using the Natural Capital as a multiplier.



Our framework.

Environmental preservation takes centre stage in our framework, to recognise the most significant challenge that faces humankind.

Natural Capital is finite. To incorporate this constraint in our most recent model, we use the Natural Capital score as a multiplier for the other three types of capital. Countries are evaluated on the efficiency with which they create well-being in the form of Human, Social, and Economic Capitals, accounting for potential depletion of or damage to the natural environment in the process of creating this well-being.

Our sustainability framework is dynamic, and changes as our understanding of the phenomena we are trying to capture evolves. Sovereign sustainability concepts have often been developed with a one-size-fits-all approach, with less stringent criteria being applied to developing countries. This has resulted in often static results, which do not accurately reflect the changing circumstances and differing priorities of countries.

Our framework evaluates every country depending on level of development. In our model, the overall sustainability score of a country is the average of the environmentally efficient Human Capital, Social Capital, and Economic Capital, created by using the Natural Capital as a multiplier.

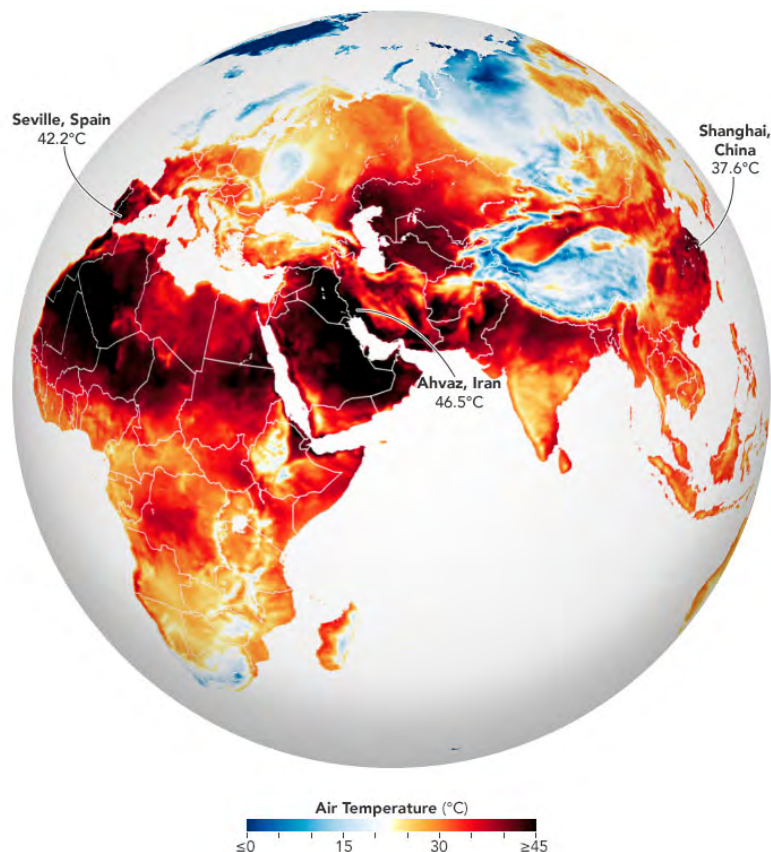
Our approach aims to make it more difficult for a country score to compensate for environmental damage by creating another form of capital, given that scores for expandable forms of capital are evaluated with respect to the environmental inputs required to create them. We do not claim that this method fully resolves all the issues of "weak" versus "strong" sustainability, but we believe it is an important step forward.

Natural Capital – decarbonise, or else...

The climate crisis used to be mostly an academic matter only a few years ago. Today, the environmental emergency is featured in full colour on the news almost daily. Extreme weather events, devastating forest fires, and other shocking developments, such as the Arctic and Antarctic experiencing temperatures 30C and 40C higher respectively than their long-term averages at the same time, when there is winter in one Hemisphere and summer in the other²¹. The so-called “Doomsday” glacier in the Antarctic has destabilised and could collapse within five years, causing an unprecedented sea-level rise²².

While the Earth’s poles still seem too far away to focus the attention of the average person, the consequences of extreme heat have entered people’s homes almost everywhere. This year, in 2022, the source of the British river Thames dried out for the first time in recorded history²³. In France, nuclear power plants could not be cooled properly due to the extreme heat outside so the power had to be cut²⁴. Unprecedented heatwaves scorched the Northern hemisphere, setting temperature records everywhere, while China reported that its surface temperatures are rising faster than the global averages .

Figure 5:
Record temperatures, June 2022



Source: NASA²⁵ as at June 2022.

There is overwhelming scientific evidence today proving that the significant increase in greenhouse gas emissions into the atmosphere is a result of human activity, which includes deforestation. When agricultural land, infrastructure and cities replace the invaluable carbon sinks that are forests, assisted by the timber industry, all that carbon dioxide has no place to go but to accumulate in the atmosphere.

From March 2021, the European Union’s (EU) Sustainable Finance Disclosure Regulation (SFDR), has come into effect to improve transparency in the market for sustainable investment. It includes requirements for the reporting of key performance indicators and it also allows for reduction of emissions to be an objective of sustainable funds. That said, there are still problems with the reliability of carbon intensity data, which is often published with substantial delays.

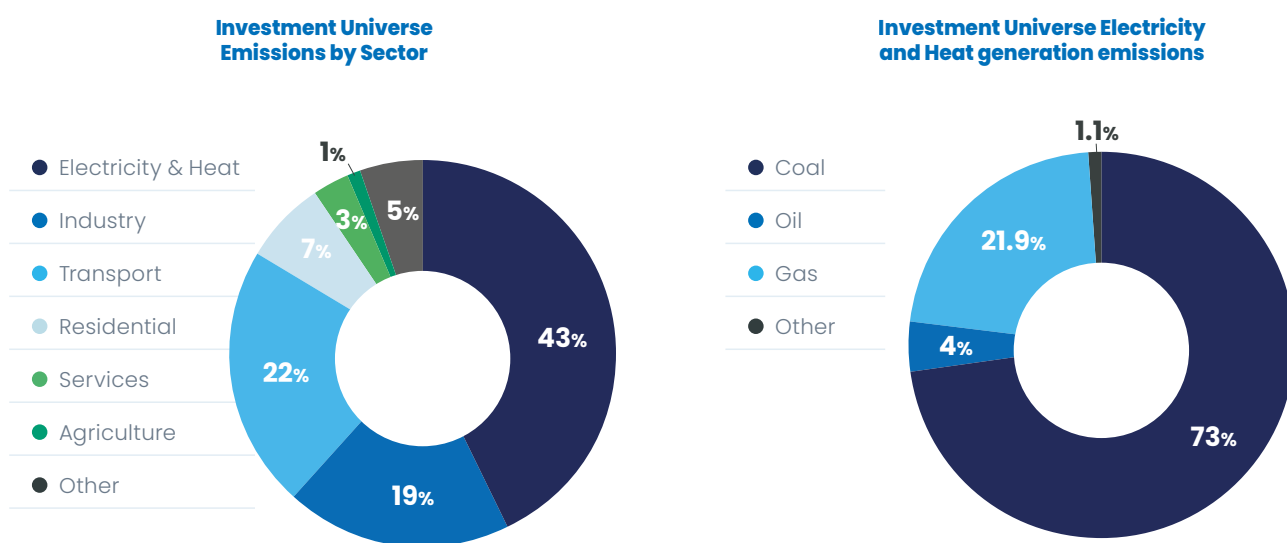
The carbon intensity of an economy is a simple calculation, which takes the carbon emissions and divides them by the GDP a country generates within the same year. However, the devil is in the detail. For example, with oil prices marching higher, oil and gas

exporters seem to generate higher GDP for the same amount of carbon emitted or exported. It makes energy exporting countries look more carbon efficient on paper, which is clearly misleading. In contrast, the depreciating currencies of the countries buying that oil have the opposite effect: as their GDP declines in USD terms and emissions stay the same, it looks as though these countries are less carbon efficient.

Therefore, standardised carbon intensity data is influenced by the fluctuations in the prices of oil and gas, as well as currencies. To avoid relying on data that can easily mislead, we are introducing our proprietary emissions model designed to keep track of countries’ decarbonisation path. It is based on a well-established empirical result that economic growth decouples first from carbon intensity, then from emissions per capita, and last from total emissions²⁷.

First, we look at the breakdown of emissions by sector for each country, and then we consider the breakdown of emissions by energy source used by each sector, as can be seen in Figure 6.

Figure 6:
CO2 emissions by sector and type of fossil fuels used



Source: Candriam and IEA, July 2022.

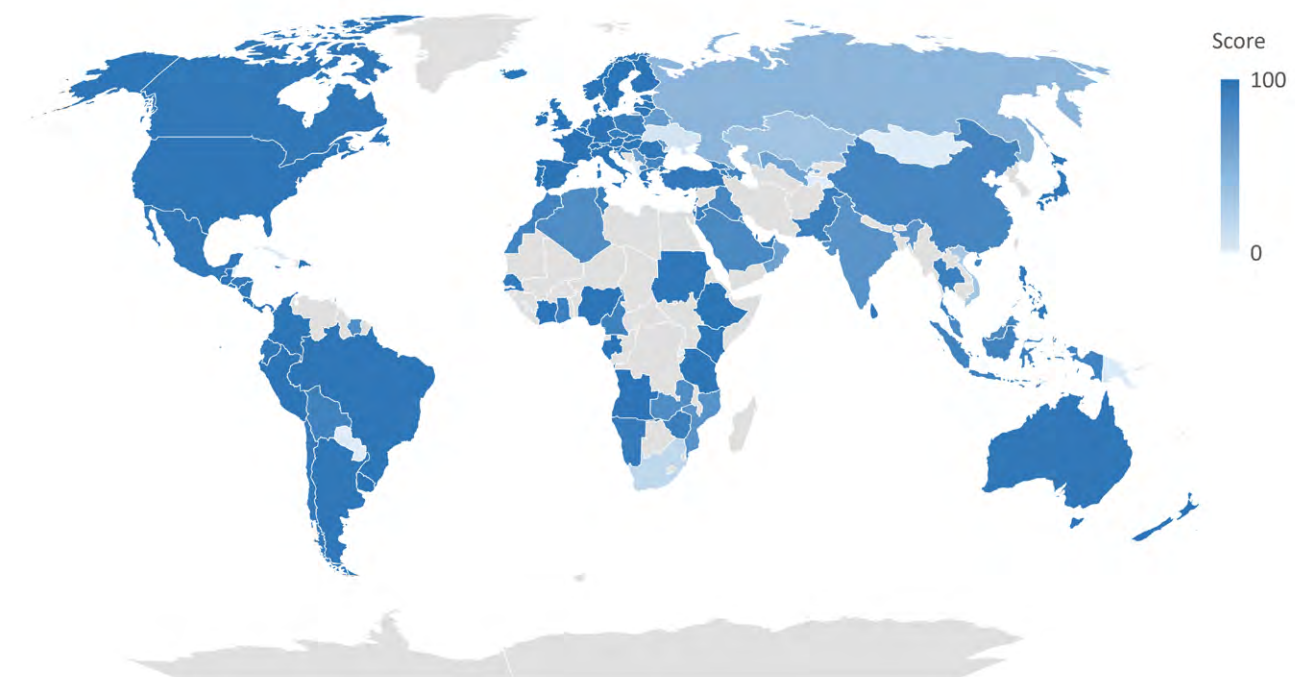
The two charts on the origins of emissions (Figure 6) show that decarbonisation objectives can be achieved easier for some sectors than others, which is mostly related to the technological solutions available at the time. This is reflected the modelling results carried out by the European Commission (Eurostat’s PRIMES model), which we incorporated into our sovereign sustainability framework and discussed in our white paper “Is the EU ready for Net Zero 2050?” published following the COP26 conference in 2021²⁸.

Based on the modelling considerations above, we assign different penalties within our emissions model, with the hardest sectors to decarbonise getting the lowest penalties, and the easiest - the largest. Therefore, decarbonisation efforts of each country are evaluated according to what is currently considered as achievable, according to Eurostat’s projections.

When considering the emissions breakdown by fuel for each of the sectors, the amount of penalties we assign also reflects how effectively a country is taking advantage of potential savings offered by new renewable energy capacity installation. The International Renewable Energy Agency has reported that 2/3 of the renewable energy capacity installed in 2021 produced cheaper energy than that offered by the cheapest fossil fuel option²⁹. This means that continuing to use coal-fired power plants, when much cheaper renewable energy is available, will attract the highest penalty, followed by oil, gas, and other fossil fuels.

We are using the output of our emissions model as a modifier of the overall carbon intensity of the economy. It takes into account, first, the extent to which countries go towards decarbonisation (on the whole and specifically for each sector) and, second, the types of the fuels they use to fulfil their energy needs.

Figure 7:
Carbon intensity score



Source: Candriam, July 2022.



We assign different penalties within our emissions model, with the hardest sectors to decarbonise getting the lowest penalties, and the easiest – the largest.

Leaders and Laggards

Within the Carbon Emissions Model, Switzerland, Sweden and Denmark are at the top of our ranking table, while Russia, Ukraine, Iran, and Kazakhstan are amongst the countries with the worst decarbonisation records. The worst record belongs to Mongolia, which is mainly due to its overreliance on coal, followed by Ukraine and South Africa.

Other weak decarbonisation efforts were witnessed among the countries of South-East Asia, with China and Indonesia ranking below 80 countries out of 123 countries, and Malaysia (91st) and India (98th) doing even worse. In contrast, some of their emerging market peers performed very well, such as Uruguay (ranked 5th on carbon intensity), and Costa Rica (ranked 8th). Both of these countries are demonstrating a development model away from carbon emissions that the rest of the emerging world could try to emulate.



Follow-up: Deforestation

In one of our recent reports, we focused on deforestation as a key factor within Natural Capital. While we were pleased to see the agreement to end deforestation emerge as one of the very few palpable outcomes of the COP26 conference³⁰, we think there is still a lot left to address. Destruction of the world's forests puts the decarbonisation ambitions of many countries at risk, as the forests act as a carbon sink, effectively providing the "net" in "net zero". We expanded on this topic as it pertains to EU's ambitions for 2050 in our white paper published after the COP26 in 2021³¹.

Deforestation and Biodiversity

After years of delay caused by the COVID-19 pandemic, the World Biodiversity Summit is finally taking place in 2022 in Montreal³², and the two issues of deforestation and biodiversity are closely linked.

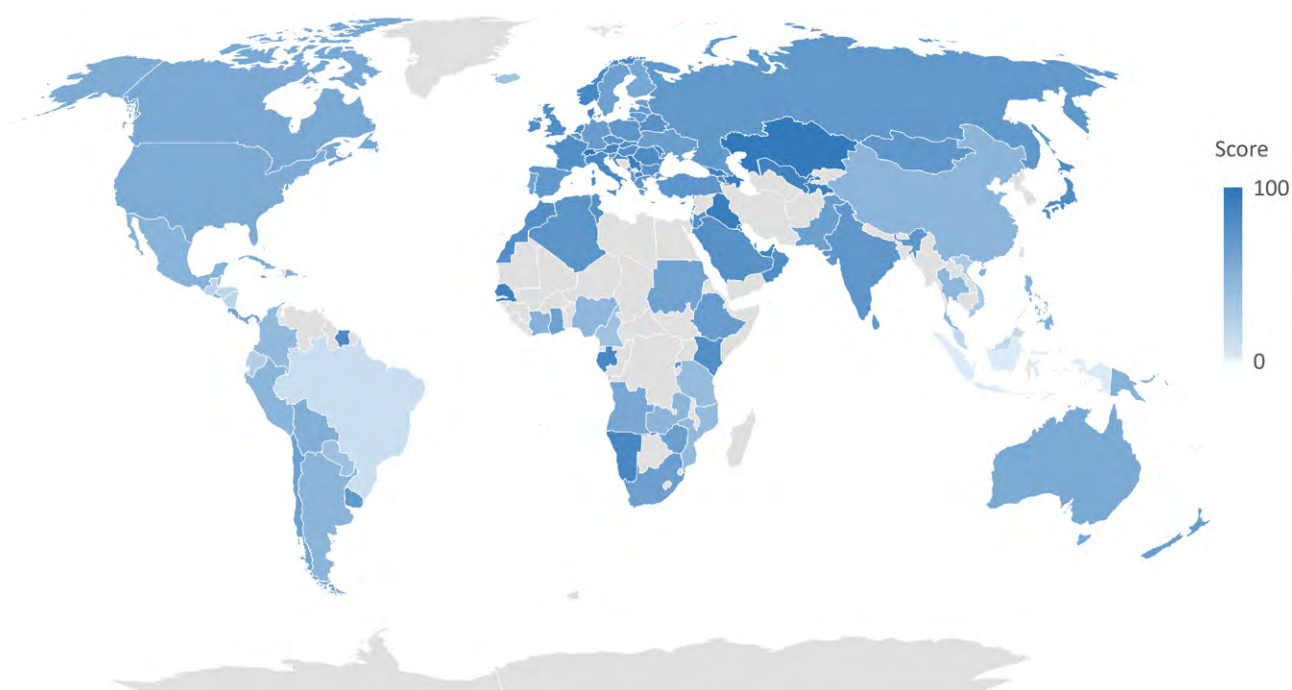
The destruction of forests leads not only to disappearance of whole forest ecosystems, but it triggers far-reaching consequences, for example due to a damaged water cycle³³, causing further biodiversity loss, as well as climate change. Wildlife populations have already suffered an overall loss of about 70% since the 1970³⁴. If biodiversity loss continues (currently it is actually accelerating), our food supply systems will suffer direct damage. We will address this topic in more detail in the next section of this Report.

Leaders and Laggards

In the Natural Habitat and Biodiversity sub-component of Natural Capital, Asian countries ranked at the bottom, with China, Malaysia, and Indonesia assigned rankings below the top 100, and Indonesia taking the very last place.

Figure 8:

Scores for the Natural Habitat and Biodiversity component of Natural Capital



Source: Candriam, July 2022

Reforestation efforts are underway in a variety of countries which suffered from destruction of forests. To succeed, this process requires the support of local communities that, for instance, have relied on logging for their livelihoods.

Candriam is taking part in these efforts alongside our partners WeForest, supporting a reforestation project in Senegal.

Breathing new life into vulnerable communities: Restoration of the Casamance mangroves in Senegal³⁵

Environmental issues are one of the core tenets of the Candriam Institute for Sustainable Development, which leads our company's philanthropic initiatives. Having focused on climate and climate-related issues such as deforestation within its investment strategy, it was a logical move for Candriam to become a business partner to WeForest, a non-profit organisation that works with communities, local organisations and NGOs to develop scalable reforestation projects.

WeForest currently has 49,000 hectares under restoration—equivalent to 61 million trees and nearly 60,000 football pitches—across 14 geographies. They have an ambitious goal - to regenerate 100,000 hectares by growing around 100 million trees by 2025.

Senegal is home to around 185,000 hectares of mangrove estuaries. But their use for firewood, construction wood and charcoal has led to around 25% of the country's mangrove forests being lost. Droughts in the 1970s and 1980s also devastated the mangroves.

Mangroves are tropical trees that thrive in conditions most timber could never tolerate—salty, coastal waters, and the interminable ebb and flow of the tide. With the ability to store vast amounts of carbon, mangrove forests are key weapons in the fight against climate change but in recent decades, they have been decimated due to the establishment of shrimp farming and palm oil plantations and recurring droughts in many countries. However, they play an invaluable role for local communities, acting as buffers to keep saltwater from flooding agricultural lands to absorbing greenhouse gases to providing food for myriad types of fish that are food sources for people who live there.

Candriam is now supporting a major reforestation program in Senegal, aiming to restore the Casamance mangroves by planting 494 hectares of mangroves—over two million trees—the equivalent of nearly 600 football pitches. The tree planting will be done by local people under the supervision of WeForest. Local communities are fully engaged in the process from initiation to planting and monitoring.

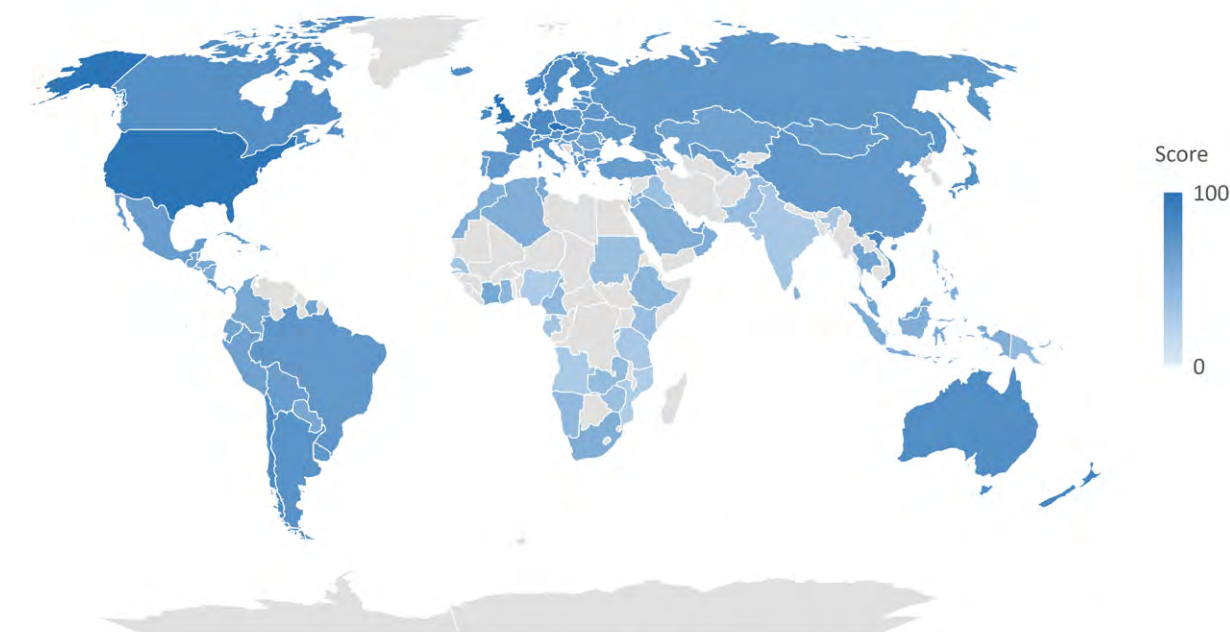
Human Capital – Food for Thought...

In 2022, we saw how fossil fuels and food could be weaponised during a conflict. Since the invasion of Ukraine, Putin’s Russia, through its state-owned companies, has terminated the deliveries of natural gas to some European countries with governments that it declared as “unfriendly”³⁶. Prior to that, the Russian government, in contravention to its contractual obligations, also disrupted energy deliveries to other European countries under the pretext of technical difficulties, or even force majeure³⁷. This has caused a significant rise in energy costs and drove inflation further upwards, putting many households under considerable financial strain.

The Russian authorities have also disrupted and expropriated Ukrainian grain shipments³⁸ which were on their way to the Middle East, Africa and many

other export destinations. Russia and Ukraine are key agricultural players, together exporting nearly 12% of food calories traded globally. They are major providers of basic agricultural commodities, including wheat, maize and sunflower oil³⁹. The sanctions against Russia and the limited ability of Ukraine to export food have raised serious concerns about food security, perhaps over and above the inflation of food prices. A deal was reached to resume exports out of Ukraine⁴⁰, but Russian attacks against port facilities put the future of this deal at the whim of the autocratic regime in Moscow⁴¹. While grain harvests have been good, the disruption might have spurred some profiteering in grain markets⁴², resulting in record profits for the handful of firms dominating trading and distribution.

Figure 9:
Food Security, Production and Supply



Source: Candriam, July 2022



In 2022, we saw how fossil fuels and food could be weaponised during a conflict.

While the resolution of the Ukraine blockade has provided a respite for the time being, further disruptions remain a danger in the medium term. Fertiliser prices depend on fossil fuel prices, and climate change is exacerbating the danger of future food crises. Therefore, we have enhanced our sustainability framework ahead of schedule to reflect food production and supply, self-sufficiency, and ultimately food security. Within Human Capital, we have added a new subcomponent within the “Basic Needs and Quality of Life” to reflect the new global realities (see Figure 9).

Leaders and Laggards

Overall leaders within Food Security are New Zealand together with European countries including the Netherlands, Germany, Norway, Ireland and the Czech Republic. Laggards are mostly in Sub-Saharan Africa – Congo, Tanzania, Mozambique, and Nigeria, as well as Venezuela in South America, as well as India.

Among the biggest Asian economies, China is scoring fairly well (ranked 38th), but India and Pakistan are outside the top 100, with Indonesia not far above that (94th). There have not been drastic changes to these rankings over the years because they are a result of the last decade or two of climate patterns. However, with new temperature records being set every year, we should not be complacent because the situation can change very quickly, with new risks materialising.

The escalation of the climate crisis is set to impact the food crisis, with countries finding it difficult to

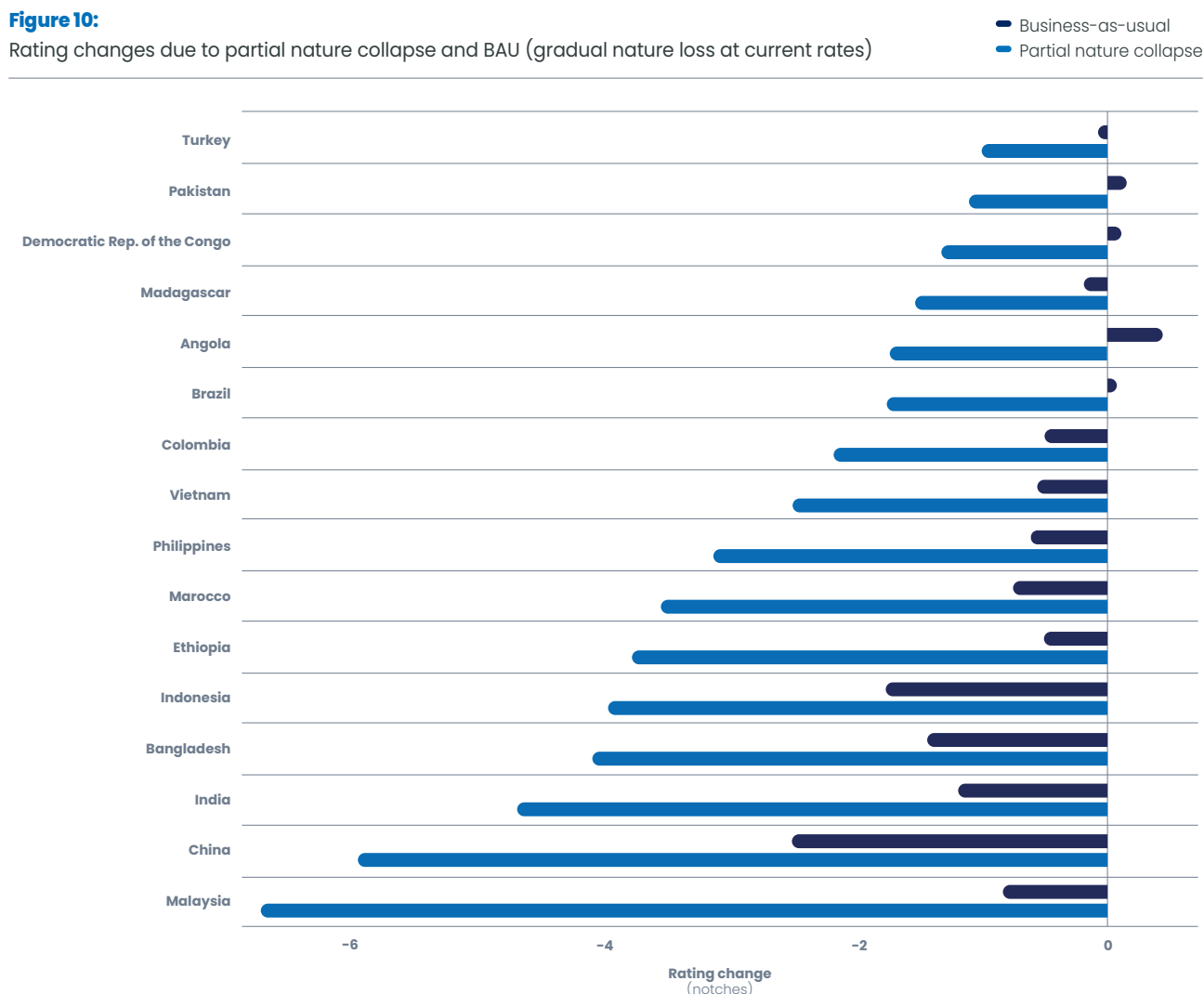
secure enough food to feed their populations. As mentioned in the previous section, China has reported surface temperatures increases accelerating above the global averages⁴³. Risks in this area are interconnected as studies have shown that rising temperatures and the fast pace of climate change are likely to lead to more conflicts, with food insecurity being one of key catalysts⁴⁴.

Climate change is already causing death and devastation across Asia: “cataclysmic” floods have killed more than a thousand people in Pakistan⁴⁵, China has issued its first national drought alert⁴⁶, threatening crops, the Yangtze River has dried out, causing power shortages⁴⁷, which required the introduction of power rationing⁴⁸. Moreover, extreme weather has already threatened rice crops in several countries, including the biggest exporter India⁴⁹.

Nature and biodiversity loss caused by human activity and climate change can lead to sovereign rating downgrades. According to a recent study, which explored the direct connection between nature loss (that typically affect food security) and sovereign ratings, the countries most at risk in that regard are Malaysia, China, India, and Indonesia⁵⁰. China’s sovereign credit rating, in particular, could be downgraded by six notches, with Malaysia faring even worse. India could lose five notches, and Indonesia – four notches⁵¹. Surely adverse weather events such as extreme heat and droughts can contribute to such risks.

Figure 10:

Rating changes due to partial nature collapse and BAU (gradual nature loss at current rates)



Source: Nature Loss and Sovereign Credit Ratings, Finance for Biodiversity Initiative, June 2022

This study, published by the Finance for Biodiversity Initiative, achieved a very important objective of attracting the attention of the financial industry to this issue. It is equally important to understand that, in reality, the consequences of nature loss in one country are not limited to that country. All ecosystems are connected in many intricate ways that science does not yet fully understand, and to think that nature loss in one country is uncorrelated to nature loss outside its borders is similar to a mistake made during the global financial crisis of 2007–2008 when it was assumed that mortgage borrower defaults in different states of the USA were not correlated. Therefore, when overstretched borrowers across the US started defaulting at the same time, contrary to market expectations (and existing models) highly rated debt securities suffered significant losses.

Asia is a home to some of the world’s most carbon-intensive economies. Within our framework, Asia is one of the lowest scorers within the Natural Habitat and Biodiversity component of Natural Capital, with China, Malaysia, and Indonesia being ranked outside the top 100 countries. In addition to this, the rise of surface temperatures is accelerating across the region. Our framework has pointed to a high likelihood over the next decade of a tail-risk event in the region, which would be neither contained, nor isolated to a particular country. The consequences of this could be very severe, and the disruption to the global system extreme, not least considering that almost 60% of people on this planet live in Asia.

Social Capital – we are all in this together

The most influential country selection criteria of our Sustainability Framework are Natural Capital and Democracy, the latter a key consideration within Social Capital. The most urgent issue that humanity faces is the climate crisis, and it is a common problem, since we all live on the same planet. It is of little use if the EU achieves net decarbonisation by 2050 while most non-EU countries continue to burn fossil fuels and disregard the climate change objectives. This common problem calls for solutions that are implemented globally.

Big global challenges are addressed through supranational organisations such as the United Nations (UN) and the Organisation for Economic Co-operation and Development (OECD), and through the use of international agreements.

However, involving autocracies in this process is often challenging. The decision-making process of most big international organisations is democratic, which is often exploited by authoritarian regimes for

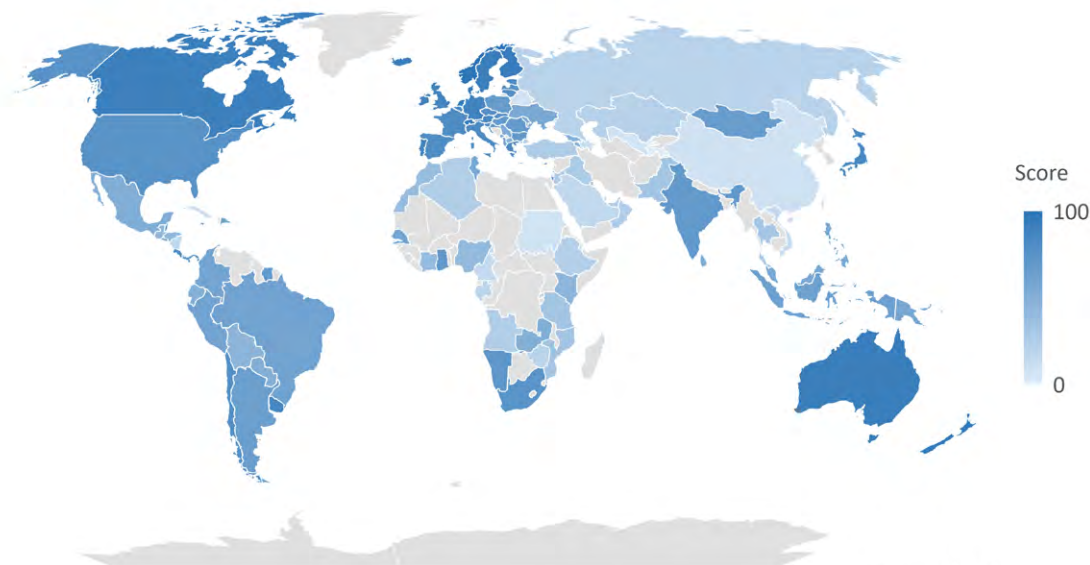
their perceived self-interest, rather than the common good of humanity. For example, when the UN General Assembly voted early in 2022 for its landmark resolution condemning the invasion of Ukraine, against were Belarus, North Korea, Eritrea and Syria, while Cuba, Nicaragua and China abstained⁵².

Indeed, the last five years saw a continuing decline in the level of democratic accountability globally, with Figure 11 showing the period under review according to our framework.

Leaders and Laggards

Amongst the countries demonstrating most improvement in democratic accountability are those that aspire to join the EU, such as Montenegro, North Macedonia, Moldova, and Armenia. The worst trend was observed in Hong Kong, with Beijing's efforts to crush the democratic system there well-documented. Other notable laggards are Nicaragua, Tanzania, Venezuela, El Salvador, and Mozambique.

Figure 11:
Democratic Accountability



Source: Candriam as at October 2022.



Economic Capital – Energy Systems in Transition

In our paper “Is the EU ready for Net Zero 2050”, which we published as a response to COP26, we outlined our methodology in assessing the energy transition process for each given country within our sovereign sustainability framework. In that paper, we stressed national security risks posed by the over-reliance of EU countries on Russian gas. The Russian invasion of Ukraine has upended the thinking around European energy security. It also became a catalyst for energy transition across the Continent, accelerating its pace with the help of REPowerEU⁵³, better diversification of energy sources and additional financing for renewables such as hydrogen.

Furthermore, Putin’s weaponisation of gas and oil has fuelled a global inflation surge, putting hundreds of millions of people on the brink of poverty across the world. This has demonstrated again the inadequacy of the commonplace ESG frameworks for sovereign analysis, which consider Energy Transition merely in terms of its environmental impact (emissions). This ignores highly topical factors such as energy security, energy self-sufficiency and global competitiveness that a country can obtain through access to renewables, which are in most cases are the sources of the cheapest energy available today.

We are convinced that the transition to low-carbon sources will impact every country, and the role of the state in an economy will need to be re-evaluated. Crucially, governments will need to finance major infrastructure projects around a mass electrification of all sectors of their economies. Furthermore, the supply-side inflation bout that started as a result of supply chain disruptions during COVID was greatly exacerbated by the spike in energy prices that followed. The impending transformation of the world economy will bring disruption to all sectors, and the imposition of carbon taxes is likely to go global. We saw the beginning of this via the EU Carbon Border Adjustment Mechanism⁵⁴ and the Emission Trading Systems in the EU⁵⁵ and China⁵⁶.

Therefore, Energy Transition monitoring is at the cornerstone of assessing the Economic Capital of a country, its future competitiveness on the global markets, as well as of the gradual decarbonisation of its economy.

Methodology

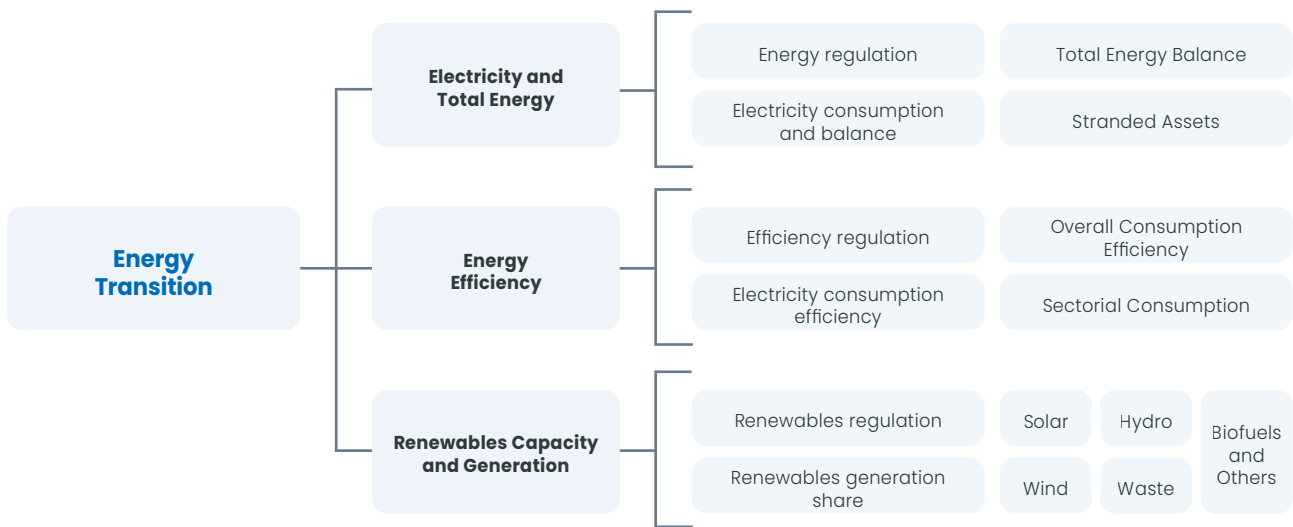
Our approach to Energy Transition is based on our conviction that its success will depend on three key components of decarbonisation: Electricity and Total Energy, Energy Efficiency, and Renewables Capacity and Generation (see Figure 13).



We are convinced that the transition to low-carbon sources will impact every country, and the role of the state in an economy will need to be re-evaluated.



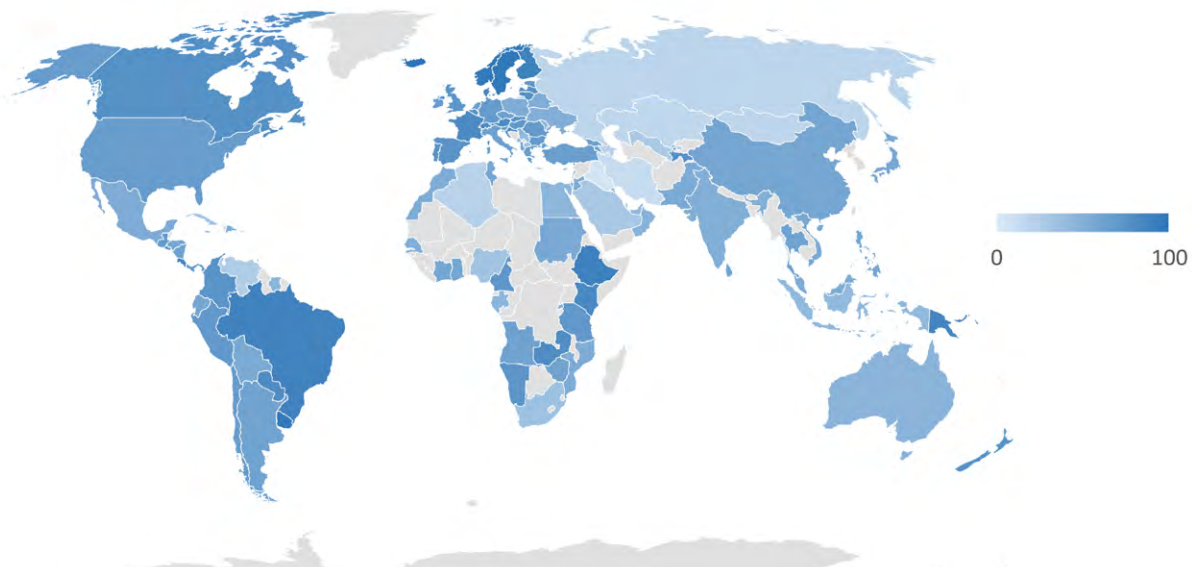
Figure 13:
Economic Capital – Energy Transition and its elements



Source: Candriam as at October 2022.

The Electricity and Total Energy component considers the energy fuel mix, with particular attention given to electricity as an important instrument of decarbonisation (see Figure 14).

Figure 14:
Electricity and Total Energy Scores



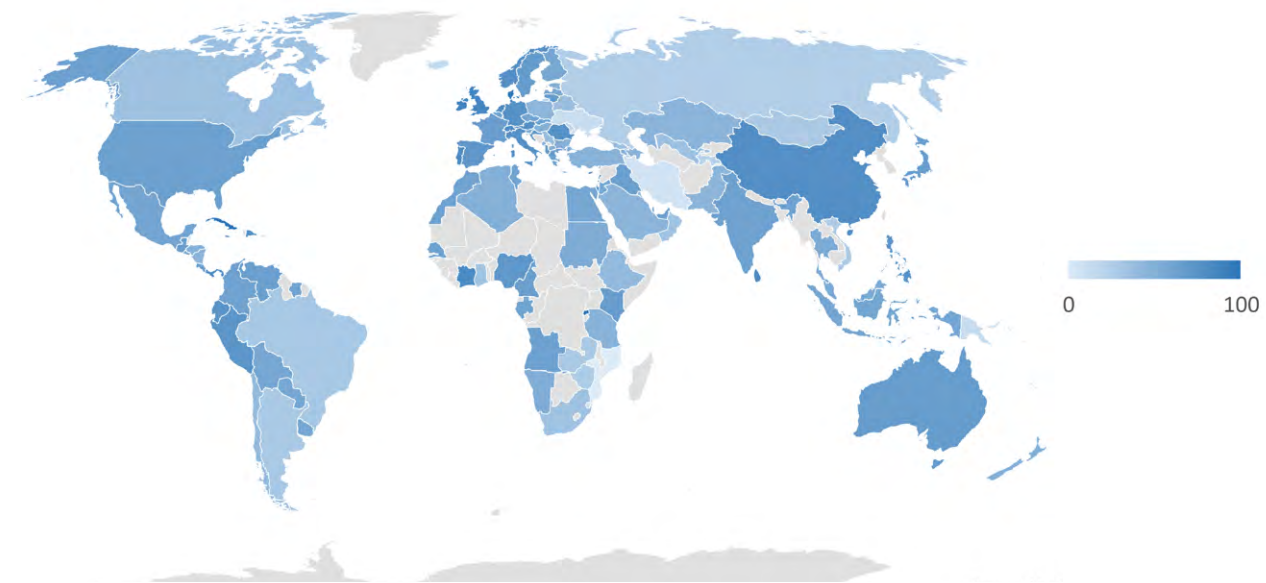
Source: Candriam as at July 2022.

The use of coal in Europe has risen since the beginning of the war in Ukraine. It has been used as a partial substitute for Russian gas, even though coal is the most carbon-intensive and polluting fossil fuel. However, if a more sustainable alternative does not replace this “emergency measure”, the continued use of coal would have the effect of stalling the energy transition of a country or a whole region. We can see this right now in Asia, the world’s biggest user of coal, which has the worst score of any other global region within this subcomponent. In contrast, Latin America uses the least coal globally, so the region gained the highest score within this

component. Emerging Europe has scored better than Africa and the Middle East. Among advanced economies, Developed Europe is leading.

Energy Efficiency scores reflect the combination of energy consumption for each sector of the economy and the efficiency of both energy production and energy consumption. Efficient use of energy is going to become increasingly important in an environment where energy security and disrupted energy trade patterns dominate the supply picture, but even more so when carbon trading schemes become widespread.

Figure 15:
Energy Efficiency Score



Source: Candriam as at July 2022.

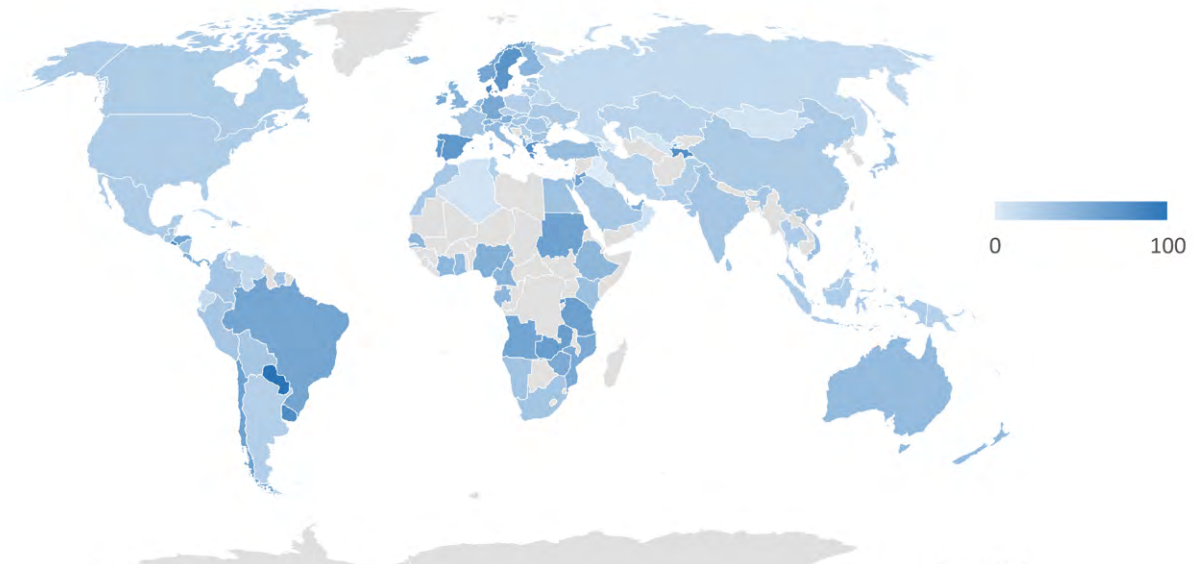
Within this factor, Developed Europe took the top spot, while Latin America is the worst laggard. Asia scored better than other developing regions, with China performing especially well, perhaps giving an early indication of what can be achieved when emissions trading schemes are introduced. We expect that high energy prices will force many countries to become more energy efficient, driven by the residential sector.

As we mentioned before, the decarbonisation of several key sectors will depend heavily on advances in technology and science. Insulating and renovating old buildings to make them more energy efficient is not exactly cutting edge. However, as we highlighted in our recent paper “Is the EU ready for Net Zero 2050”, the pace of insulating older buildings has been too slow, and governments will need to help homeowners with the costs.

Renewables Capacity and Generation component covers regulatory incentives for renewables and installed capacity for each type of energy sources. This is where countries score very low overall but,

consequently, it is here that we see the biggest opportunities for improvement, especially considering the impressive drop in installation costs for wind and solar over the last decade.

Figure 16:
Renewables Capacity and Generation Score



Source: Candriam as at July 2022.

Latin American countries have been traditionally strong when it came to renewables, given the abundance of hydro resources. However, hydro power comes with its own sustainability risk, such as deforestation, which, together with climate change⁵⁷ and La Nina⁵⁸, affecting the water cycle in the region. This, in turn, can lead to megadroughts, impacting the countries' ability to rely on hydro for energy production, as well as disrupting food security (local harvests).

Energy transition and decarbonisation involve significant disruption to economic activity globally, and governments will play a leading role in reshaping the way we assess economies.

Given the need for global emissions to peak by 2025⁵⁹, countries need to act fast. Laggards will find it a lot more expensive to decarbonise later, as low-carbon

provisions will increasingly be embedded in trading relationships.

In addition, the consumer demand for sustainable products is growing fast across developed markets. Those countries that win in the decarbonisation race, could rip rich rewards in the highly competitive global export market.



The continued use of coal would have the effect of stalling the energy transition of a country or a whole region.

Conclu-

Conclusion.

sion.

As the curtain finally went down on an age of low interest rates and central bank support, there are new actors at play.

The appearance of one grey swan after another heralded monumental geopolitical shifts, market volatility, stubbornly resurgent inflation, and renewed pressures on “rich” and “poor” countries alike. The climate crisis is the most pressing challenge of our time but the solutions are unlikely to be supported by the abundance of “cheap capital”, as it has become a thing of the past. In most cases, governments will need to step in.

The race to decarbonise economic activity is speeding up but it is not yet fast enough. Change presents a big opportunity for the financial industry, and after many years the road ahead seems clearer – investing sustainably to support long-term solutions can bring both positive impact and superior returns. The demand for this comes from the grassroots – increasingly, consumers want to make sustainable choices, whether they are about goods and services, or savings and investments.

To help meet sustainable goals within the sovereign market, the investment community needs to support sovereign countries that want to be a part of the international community and to deal with the climate crisis, while at the same time upholding democratic norms and human rights locally. This support needs to include providing financing to such governments, and this is what our framework attempts to address.

25 years ago, Candriam⁶⁰ became one of the first asset managers to embrace responsible investing. Today there is a rapidly growing community of investors, institutions, and governments that don't see the world as a zero-sum, cut-throat competition to make a quick buck, but as a venue to cooperate and find common solutions together.

By relying on strong convictions about what constitutes sovereign sustainability, and by striving to support solutions for today's global challenges, investors can make a real difference.

Appendix.

Country Rankings

N= Natural Capital, H= Human Capital, S= Social Capital, X= Economic Capital

Score – reflects the overall sustainability score of a country

N, H, S, X - Capital scores are shown in percentiles, indicating what percentage of the overall universe a country outperforms in the respective capital

Rank	Country	Score	In/Out	Percentiles			
				N	H	S	X
1	Denmark	100.00	IN	98%	98%	99%	100%
2	Switzerland	96.27	IN	100%	93%	94%	98%
3	Finland	94.68	IN	98%	90%	98%	92%
4	Luxembourg	92.14	IN	93%	93%	100%	83%
5	United Kingdom	88.96	IN	96%	100%	87%	99%
6	Sweden	87.52	IN	99%	89%	95%	98%
7	Germany	85.06	IN	93%	96%	88%	95%
8	France	84.00	IN	97%	86%	84%	90%
9	Ireland	83.84	IN	95%	84%	89%	82%
10	Norway	82.79	IN	85%	99%	96%	93%
11	Austria	82.65	IN	94%	88%	92%	85%
12	Netherlands	82.16	IN	89%	95%	98%	91%
13	Spain	81.04	IN	92%	73%	80%	96%
14	Belgium	80.98	IN	91%	84%	89%	87%
15	New Zealand	77.97	IN	88%	89%	97%	88%
16	Estonia	75.69	IN	74%	77%	86%	63%
17	Portugal	72.74	IN	90%	79%	84%	80%
18	Bermuda	71.35	IN	89%	69%	90%	52%
19	Malta	70.18	IN	87%	80%	80%	86%
20	Japan	69.68	IN	76%	81%	85%	93%
21	Canada	69.24	IN	82%	85%	93%	84%
22	Iceland	67.25	IN	81%	94%	93%	76%
23	Italy	67.14	IN	84%	75%	70%	81%

24	Slovenia	66.11	IN	83%	78%	83%	72%
25	Uruguay	64.03	IN	79%	64%	82%	75%
26	Korea, Rep.	62.82	IN	69%	98%	73%	79%
27	Australia	62.07	IN	62%	91%	91%	84%
28	Costa Rica	61.84	IN	78%	65%	78%	70%
29	Czech Republic	60.90	IN	80%	82%	79%	58%
30	Israel	58.20	OUT	75%	83%	61%	80%
31	Cyprus	57.44	IN	73%	68%	71%	77%
32	United States	57.24	IN	68%	97%	75%	89%
33	Croatia	56.89	IN	72%	67%	72%	71%
34	Lithuania	56.28	IN	80%	70%	77%	66%
35	Greece	55.98	IN	70%	61%	68%	73%
36	Chile	55.86	IN	71%	71%	76%	74%
37	Hungary	54.55	IN	86%	70%	64%	68%
38	Slovak Republic	54.48	IN	84%	80%	69%	48%
39	Singapore	51.91	IN	61%	87%	81%	89%
40	Latvia	51.45	IN	77%	72%	75%	65%
41	Poland	50.94	IN	75%	75%	66%	64%
42	Hong Kong SAR, China	50.92	IN	65%	92%	74%	94%
43	Bulgaria	48.04	IN	64%	59%	57%	61%
44	Rwanda	46.31	OUT	67%	17%	38%	67%
45	Romania	44.26	IN	70%	48%	57%	49%
46	Malaysia	40.81	IN	36%	57%	59%	75%
47	Mexico	38.92	IN	57%	48%	40%	59%
48	Panama	38.72	IN	66%	39%	58%	60%
49	Brazil	37.79	IN	60%	50%	46%	66%
50	Tunisia	36.84	IN	58%	38%	43%	43%
51	North Macedonia	36.57	IN	51%	47%	47%	47%
52	Argentina	36.40	IN	56%	57%	56%	37%
53	Bahamas, The	35.84	IN	38%	42%	70%	97%
54	Albania	35.79	IN	66%	34%	52%	34%
55	China	35.74	OUT	33%	74%	21%	70%
56	El Salvador	35.63	IN	57%	40%	45%	50%
57	Kenya	35.39	IN	63%	15%	28%	51%
58	Peru	35.33	IN	54%	43%	42%	46%
59	Jordan	34.12	OUT	61%	18%	27%	52%

60	Qatar	33.76	OUT	23%	63%	65%	40%
61	Moldova	33.52	IN	43%	41%	51%	21%
62	Morocco	33.17	IN	52%	28%	34%	69%
63	Thailand	33.14	OUT	35%	58%	26%	56%
64	Suriname	33.13	IN	25%	44%	54%	19%
65	Philippines	32.84	IN	42%	25%	43%	57%
66	Turkey	32.39	OUT	52%	52%	13%	55%
67	Jamaica	31.59	IN	45%	31%	62%	38%
68	Egypt, Arab Rep.	31.56	OUT	39%	43%	18%	30%
69	Senegal	31.56	IN	50%	12%	52%	29%
70	Montenegro	31.53	IN	30%	62%	49%	57%
71	Serbia	31.17	IN	34%	54%	50%	36%
72	Colombia	30.67	IN	46%	46%	37%	53%
73	Sri Lanka	29.84	IN	55%	22%	39%	34%
74	Dominican Republic	29.70	IN	48%	33%	48%	39%
75	Belize	29.69	IN	30%	34%	53%	78%
76	Georgia	29.24	IN	48%	36%	48%	48%
77	United Arab Emirates	29.00	OUT	20%	66%	55%	43%
78	Tanzania	28.75	IN	47%	7%	24%	25%
79	Namibia	28.58	IN	37%	13%	67%	20%
80	Armenia	28.19	IN	49%	27%	32%	41%
81	South Africa	26.65	IN	20%	24%	63%	33%
82	Guatemala	26.02	IN	59%	21%	23%	11%
83	Ecuador	25.20	IN	39%	35%	41%	17%
84	Ethiopia	24.92	OUT	53%	7%	11%	15%
85	Trinidad and Tobago	24.09	IN	14%	61%	60%	1%
86	Cote d'Ivoire	24.09	IN	41%	9%	29%	62%
87	Honduras	23.66	IN	43%	25%	20%	44%
88	Kazakhstan	23.50	OUT	11%	56%	25%	11%
89	Saudi Arabia	23.28	OUT	12%	45%	16%	61%
90	Indonesia	22.72	IN	25%	20%	44%	42%
91	Ghana	22.63	IN	27%	16%	66%	30%
92	Angola	22.24	OUT	28%	2%	19%	45%
93	Cuba	22.01	OUT	44%	60%	22%	5%
94	Bolivia	21.03	OUT	16%	30%	31%	27%
95	Ukraine	20.64	OUT	22%	53%	16%	26%

96	Paraguay	20.54	OUT	32%	37%	33%	39%
97	Zambia	19.83	OUT	26%	8%	34%	12%
98	Vietnam	18.99	OUT	8%	55%	25%	35%
99	Russian Federation	16.39	OUT	24%	66%	0%	22%
100	India	15.79	OUT	15%	11%	35%	54%
101	Nigeria	15.76	OUT	29%	1%	14%	31%
102	Uzbekistan	15.67	OUT	5%	49%	7%	8%
103	Belarus	15.52	OUT	31%	76%	2%	6%
104	Azerbaijan	15.50	OUT	17%	26%	12%	24%
105	Mongolia	15.37	OUT	6%	30%	61%	4%
106	Lebanon	15.16	OUT	40%	16%	7%	16%
107	Oman	14.49	OUT	1%	51%	36%	16%
108	Tajikistan	14.37	OUT	18%	20%	5%	20%
109	Nicaragua	13.67	OUT	34%	29%	11%	28%
110	Cameroon	12.94	OUT	16%	5%	8%	25%
111	Gabon	12.05	OUT	9%	11%	20%	23%
112	Algeria	11.85	OUT	13%	23%	15%	10%
113	Mozambique	11.78	OUT	10%	3%	17%	3%
114	Zimbabwe	10.94	OUT	21%	10%	10%	7%
115	Papua New Guinea	10.46	OUT	11%	2%	30%	32%
116	Kuwait	9.83	OUT	2%	39%	39%	7%
117	Pakistan	9.68	OUT	19%	6%	6%	14%
118	Iran, Islamic Rep.	6.50	OUT	0%	52%	3%	2%
119	Bahrain	5.05	OUT	2%	32%	30%	18%
120	Congo, Rep.	3.99	OUT	3%	0%	9%	13%
121	Iraq	3.82	OUT	4%	14%	4%	2%
122	Venezuela, RB	0.44	OUT	7%	19%	2%	0%
123	Sudan	0.00	OUT	7%	4%	1%	9%



Alphabetical Rankings

N= Natural Capital, H= Human Capital, S= Social Capital, X= Economic Capital

Score – reflects the overall sustainability score of a country

N, H, S, X - Capital scores are shown in percentiles, indicating what percentage of the overall universe a country outperforms in the respective capital

Rank	Country	Score	In/Out	Percentiles			
				N	H	S	X
54	Albania	35.79	IN	66%	34%	52%	34%
112	Algeria	11.85	OUT	13%	23%	15%	10%
92	Angola	22.24	OUT	28%	2%	19%	45%
52	Argentina	36.40	IN	56%	57%	56%	37%
80	Armenia	28.19	IN	49%	27%	32%	41%
27	Australia	62.07	IN	62%	91%	91%	84%
11	Austria	82.65	IN	94%	88%	92%	85%
104	Azerbaijan	15.50	OUT	17%	26%	12%	24%
53	Bahamas, The	35.84	IN	38%	42%	70%	97%
119	Bahrain	5.05	OUT	2%	32%	30%	18%
103	Belarus	15.52	OUT	31%	76%	2%	6%
14	Belgium	80.98	IN	91%	84%	89%	87%
75	Belize	29.69	IN	30%	34%	53%	78%
18	Bermuda	71.35	IN	89%	69%	90%	52%
94	Bolivia	21.03	OUT	16%	30%	31%	27%
49	Brazil	37.79	IN	60%	50%	46%	66%
43	Bulgaria	48.04	IN	64%	59%	57%	61%
110	Cameroon	12.94	OUT	16%	5%	8%	25%
21	Canada	69.24	IN	82%	85%	93%	84%
36	Chile	55.86	IN	71%	71%	76%	74%
55	China	35.74	OUT	33%	74%	21%	70%
72	Colombia	30.67	IN	46%	46%	37%	53%
120	Congo, Rep.	3.99	OUT	3%	0%	9%	13%
28	Costa Rica	61.84	IN	78%	65%	78%	70%
86	Cote d'Ivoire	24.09	IN	41%	9%	29%	62%
33	Croatia	56.89	IN	72%	67%	72%	71%
93	Cuba	22.01	OUT	44%	60%	22%	5%

31	Cyprus	57.44	IN	73%	68%	71%	77%
29	Czech Republic	60.90	IN	80%	82%	79%	58%
1	Denmark	100.00	IN	98%	98%	99%	100%
74	Dominican Republic	29.70	IN	48%	33%	48%	39%
83	Ecuador	25.20	IN	39%	35%	41%	17%
68	Egypt, Arab Rep.	31.56	OUT	39%	43%	18%	30%
56	El Salvador	35.63	IN	57%	40%	45%	50%
16	Estonia	75.69	IN	74%	77%	86%	63%
84	Ethiopia	24.92	OUT	53%	7%	11%	15%
3	Finland	94.68	IN	98%	90%	98%	92%
8	France	84.00	IN	97%	86%	84%	90%
111	Gabon	12.05	OUT	9%	11%	20%	23%
76	Georgia	29.24	IN	48%	36%	48%	48%
7	Germany	85.06	IN	93%	96%	88%	95%
91	Ghana	22.63	IN	27%	16%	66%	30%
35	Greece	55.98	IN	70%	61%	68%	73%
82	Guatemala	26.02	IN	59%	21%	23%	11%
87	Honduras	23.66	IN	43%	25%	20%	44%
42	Hong Kong SAR, China	50.92	IN	65%	92%	74%	94%
37	Hungary	54.55	IN	86%	70%	64%	68%
22	Iceland	67.25	IN	81%	94%	93%	76%
100	India	15.79	OUT	15%	11%	35%	54%
90	Indonesia	22.72	IN	25%	20%	44%	42%
118	Iran, Islamic Rep.	6.50	OUT	0%	52%	3%	2%
121	Iraq	3.82	OUT	4%	14%	4%	2%
9	Ireland	83.84	IN	95%	84%	89%	82%
30	Israel	58.20	OUT	75%	83%	61%	80%
23	Italy	67.14	IN	84%	75%	70%	81%
67	Jamaica	31.59	IN	45%	31%	62%	38%
20	Japan	69.68	IN	76%	81%	85%	93%
59	Jordan	34.12	OUT	61%	18%	27%	52%
88	Kazakhstan	23.50	OUT	11%	56%	25%	11%
57	Kenya	35.39	IN	63%	15%	28%	51%
26	Korea, Rep.	62.82	IN	69%	98%	73%	79%
116	Kuwait	9.83	OUT	2%	39%	39%	7%
40	Latvia	51.45	IN	77%	72%	75%	65%

106	Lebanon	15.16	OUT	40%	16%	7%	16%
34	Lithuania	56.28	IN	80%	70%	77%	66%
4	Luxembourg	92.14	IN	93%	93%	100%	83%
46	Malaysia	40.81	IN	36%	57%	59%	75%
19	Malta	70.18	IN	87%	80%	80%	86%
47	Mexico	38.92	IN	57%	48%	40%	59%
61	Moldova	33.52	IN	43%	41%	51%	21%
105	Mongolia	15.37	OUT	6%	30%	61%	4%
70	Montenegro	31.53	IN	30%	62%	49%	57%
62	Morocco	33.17	IN	52%	28%	34%	69%
113	Mozambique	11.78	OUT	10%	3%	17%	3%
79	Namibia	28.58	IN	37%	13%	67%	20%
12	Netherlands	82.16	IN	89%	95%	98%	91%
15	New Zealand	77.97	IN	88%	89%	97%	88%
109	Nicaragua	13.67	OUT	34%	29%	11%	28%
101	Nigeria	15.76	OUT	29%	1%	14%	31%
51	North Macedonia	36.57	IN	51%	47%	47%	47%
10	Norway	82.79	IN	85%	99%	96%	93%
107	Oman	14.49	OUT	1%	51%	36%	16%
117	Pakistan	9.68	OUT	19%	6%	6%	14%
48	Panama	38.72	IN	66%	39%	58%	60%
115	Papua New Guinea	10.46	OUT	11%	2%	30%	32%
96	Paraguay	20.54	OUT	32%	37%	33%	39%
58	Peru	35.33	IN	54%	43%	42%	46%
65	Philippines	32.84	IN	42%	25%	43%	57%
41	Poland	50.94	IN	75%	75%	66%	64%
17	Portugal	72.74	IN	90%	79%	84%	80%
60	Qatar	33.76	OUT	23%	63%	65%	40%
45	Romania	44.26	IN	70%	48%	57%	49%
99	Russian Federation	16.39	OUT	24%	66%	0%	22%
44	Rwanda	46.31	OUT	67%	17%	38%	67%
89	Saudi Arabia	23.28	OUT	12%	45%	16%	61%
69	Senegal	31.56	IN	50%	12%	52%	29%
71	Serbia	31.17	IN	34%	54%	50%	36%
39	Singapore	51.91	IN	61%	87%	81%	89%
38	Slovak Republic	54.48	IN	84%	80%	69%	48%

24	Slovenia	66.11	IN	83%	78%	83%	72%
81	South Africa	26.65	IN	20%	24%	63%	33%
13	Spain	81.04	IN	92%	73%	80%	96%
73	Sri Lanka	29.84	IN	55%	22%	39%	34%
123	Sudan	0.00	OUT	7%	4%	1%	9%
64	Suriname	33.13	IN	25%	44%	54%	19%
6	Sweden	87.52	IN	99%	89%	95%	98%
2	Switzerland	96.27	IN	100%	93%	94%	98%
108	Tajikistan	14.37	OUT	18%	20%	5%	20%
78	Tanzania	28.75	IN	47%	7%	24%	25%
63	Thailand	33.14	OUT	35%	58%	26%	56%
85	Trinidad and Tobago	24.09	IN	14%	61%	60%	1%
50	Tunisia	36.84	IN	58%	38%	43%	43%
66	Turkey	32.39	OUT	52%	52%	13%	55%
95	Ukraine	20.64	OUT	22%	53%	16%	26%
77	United Arab Emirates	29.00	OUT	20%	66%	55%	43%
5	United Kingdom	88.96	IN	96%	100%	87%	99%
32	United States	57.24	IN	68%	97%	75%	89%
25	Uruguay	64.03	IN	79%	64%	82%	75%
102	Uzbekistan	15.67	OUT	5%	49%	7%	8%
122	Venezuela, RB	0.44	OUT	7%	19%	2%	0%
98	Vietnam	18.99	OUT	8%	55%	25%	35%
97	Zambia	19.83	OUT	26%	8%	34%	12%
114	Zimbabwe	10.94	OUT	21%	10%	10%	7%



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