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Stop ‘n Go Economy creates Bottlenecks

Net Zero Emission – Mission Impossible?

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INVESTMENT REPORT Q2 2021

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Global Equities – Expectations

By Managing Director and Portfolio Manager, Bo Knudsen
C WorldWide Asset Management Fondsmaeglerselskab A/S.

Stop 'n go economy creates short-term bottlenecks

We previously advocated for calmness with regard to bond yields. We see interest rate and inflation trends in 2021 and the subsequent market rotations primarily because of an imbalance in the world economy following the lockdowns in 2020. As the economies have reopened, economic growth has surprised positively driven by the proliferation of vaccination programs combined with high savings levels and pent-up consumer demand. The dramatic and sudden shift in consumer demand has created short-term bottlenecks in several areas – for instance, within the technology sector. The automotive sector in the United States is another example, where sales - as shown in Figure 1 on the next page - have historically oscillated around 17 mn cars annually. The steep drop in car sales in 2020 is in many ways reminiscent of the development during the last financial crisis, but while it took seven years during the financial crisis to regain previous sales levels, this time it took merely seven months. The sales rebound has actually briefly surpassed the long-term trend. This dramatic stop 'n go effect causes imbalances and challenges in the production chains, which is the reason for the current bottlenecks and rising prices. In most sectors there is no long-term supply issue - it just takes time to revamp and adjust capacity.

In addition, there has been a noticeable shift in consumption patterns - first from services to products and now the opposite trend, where the service sectors are experiencing high growth. These swift consumption changes require companies to behave with agility and puts strains on the labor market. Such behavioral

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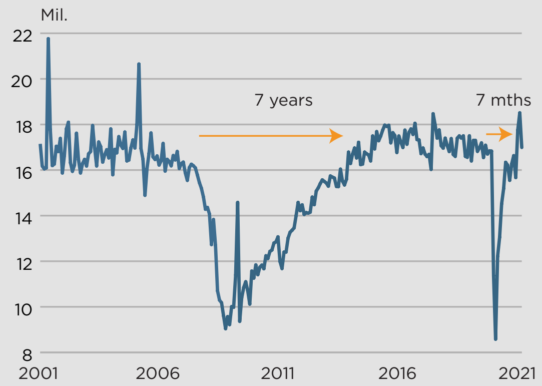
Figure 1: Development in US car sales



Source: Bloomberg as of May 2021

changes induce short-term bottlenecks. Generally, the global economy has handled this situation reasonably well - not least with the help of effective technology and communication tools.

These consumption effects also raise consumer prices, where the latest survey in the US shows an annual CPI increase of 5%. This development has also influenced long-term inflation expectations, which are now approx. 2.5%, and thus above the US Federal Reserve's (Fed) long-term target of 2%.

However, increased inflation has not driven long-term interest rates higher. On the contrary, the US 10-year bond yield has actually fallen slightly over the past few months. The self-inflicted recession and the swift reopening have created economic imbalances, where companies need to recalibrate their production capacity and staffing needs. Thereafter, we would expect economic growth, interest rates and inflation to return to their long-term trend. In the US, the government increased financial support to the unemployed during the lockdown, but these programs will be phased-out in September. This is expected to support labor supply, thereby dampening wage inflation. Volatility acts like a spring with sharp fluctuations in the beginning, whereafter the fluctuations become smaller and smaller and the fundamental trend again becomes dominant.
We believe that bond investors are analysing current developments through this prism, while the central banks - despite the recent discussions about possible interest rate hikes in 2023 - continue their support through massive market purchases in the capital markets.

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Cyclical sectors in the limelight

Cyclical sectors such as commodities, banks, the automotive sector and other consumer discretionary sectors have experienced a noticeable rebound in the last 6-9 months following the steep losses in the spring of 2020. In general, their performance this year has fared better than that of the structural growth companies. Investors have favored the so-called "high octane" companies, where for example cyclical companies in Europe have increased approx. 50% more than their defensive counterparts. We prefer companies that have a strong market position and thereby pricing power, attractive investment opportunities and through the concept of compounding increase the long-term value of the company. This is in contrast to companies that only have pricing power in the first part of the reopening phase, where supply and demand are in imbalance.

Developments in China have a strong influence on the commodity markets and with China implementing tighter credit policies, we are already seeing the dampening effect on commodity prices and the related cyclical industries. When the reopening party is over and the market imbalances are corrected, we expect the fundamentals, and the long-term earnings trajectory of companies will again emerge as the anchor for the direction of equity prices. The companies in our global portfolio increased earnings by 9% during the Covid-19 pandemic in 2020, while earnings for the market fell 16%. In 2021, our portfolio companies continue to maintain a positive development with an expected growth rate of approx. 20%. However, cyclical companies are growing ever stronger on the back of the economic rebound pushing market earnings growth above 30%. This has been the primary driver of the markets in 2021 with cyclical sectors taking short-term leadership. During periods like this, structural growth companies usually lag the market, which is the reason our global portfolio has – in contrast to last year - underperformed the market in the first half of this year. As the effects of the reopening become more muted and the economic imbalances are corrected, we expect investors to once again focus on the powerful investment concept of companies with the ability to compound.

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The big companies defy the law of gravity

It is noteworthy that several of the major companies, especially within the internet space are delivering accelerating growth rates despite their dominant size. As an example, Alphabet (Google) posted revenue growth of 34% in the latest quarter, while Amazon.com lifted revenue 44%. Of further note is that this performance was not the result of a weak comparison on the back of the Covid-induced recession in 2020, but rather evidence of another year in a period of continuous growth. This paints an impressive picture, where the big companies almost defy the law of gravity by continuously gaining market share and accelerating growth rates due to the pervasive trend of digitization. This reveals the value of finding those true compounding companies, where the risk today, especially relating to the technology leaders primarily relates to regulatory interventions.

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A positive market outlook

It can be a humiliating experience commenting on the short-term stock market outlook, but we believe the overall trend of the market continues to be positive despite possible risk factors. The most current risk seems to be continued upward inflation pressures forcing central banks to tighten monetary policy more than the capital markets can sustain. The large increases in equities and housing markets - to a large extend driven by low interest rates – make them vulnerable to tighter monetary policies. However, this is not our main scenario. As mentioned, there are valid arguments to expect rising inflation to be short-lived. However, should the inflation trend become stickier, this will not necessarily lead to higher interest rates as central banks are expected to continue to intervene in the bond markets. High government debt levels and the historic need for financing of the much-needed green investments are strong factors supporting continued low real interest rates.

Looking at our points of the compass to understand the future market direction, we have three indicators, where at least two out of three are indicating positive signals. The first is the US economy, which remains the anchor of the global economy and capital markets. The forecast for the US economy on the back of the reopening is a growth rate of approx. 6% in 2021. This is driven by pent-up consumer demand, supported by a consumer in a relatively good financial position given the gains in stock markets and rapidly rising house prices. In the US, for example, house prices have risen almost 24% over the last year. Another important indicator is the shape of the yield curve, where a negative yield curve

signals a possible coming recession. With the rise in long-term interest rates, the yield curve is currently exhibiting a normal and positive slope, which also provides relief for the banking sector. The last factor is the behavior of the central banks. Over the last 12 months, the European Central Bank (ECB) and the Fed acquired bonds for approx. USD 8 trillion. This is a gigantic amount of quantitative easing and is the result of the stimulus packages enacted during the self-inflicted shutdown and recession in 2020. The pace of asset purchases is still very stimulative, although the pace has more or less been halved. Increased inflation pressures have reignited the old debate about tapering. Previous attempts to tighten monetary policy have been problematic for equity markets, but we foresee monetary policy remaining accommodative for quite a while, even with the possibility of tapering being implemented.

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In conclusion, there are at least two tailwinds as well as a third one being somewhat positive, although turning more negative. This should provide support for equity markets. We find many attractive investment candidates with a reasonable valuation provided that bond yields don't rise too strongly. As global economies reestablish a more natural equilibrium correcting the current supply and demand imbalance, we see the current inflation scare subsiding, thus paving the way for the structural slow-growth environment to regain dominance. In this environment, growth stocks that can structurally outgrow nominal GDP growth, will once again become the investment of choice.

Net Zero Emission –
Mission Impossible?

By Morten Springborg,
Global Thematic Specialist, C WorldWide Asset Management.

Key Takeaways

- In this white paper we argue that it is possible to reach the target of net zero emissions of greenhouse gases by midcentury. However, the current policy pathway will not get us to the target. Solely focusing on renewable energy and electrifying everything is bound to fail, and the world needs to recognize that (cleaner) fossil fuels will continue to be part of the energy mix for the rest of this century.

- Instead of very expensive arbitrary subsidies for favored technologies we should keep an open mind and rapidly get CO2 taxes to $50-100/ton across the world to create a level playing field for different abatement solutions. We should recognize that the climate doesn't care how we get to net zero, only that we do. Much more broad-based activation of nature-based carbon sinks like oceans, forests and the soil are required if we want to realize the ambition of tackling climate change. In doing so, we also simultaneously address the issue of collapsing biodiversity across the planet.

Back in 2015 we concluded, that energy no longer was a resource, but rather a technology. Costs of new technologies fall over time, and we expected storage and energy costs would continue to fall. Electricity produced from solar panels and windmills is today the cheapest electricity available in most parts of the world. Over the coming decades renewable energy prices will continue to fall and take most of the market for electricity generation. Electric vehicles saw real acceleration in sales in 2020 and within a few years will be the obvious choice for all when buying a car. A new technology that is cheaper, cleaner, and more reliable than the existing technology will not take a 5% or 10% market share position and reach a happy equilibrium with the old technology – the new technology will eventually take everything.

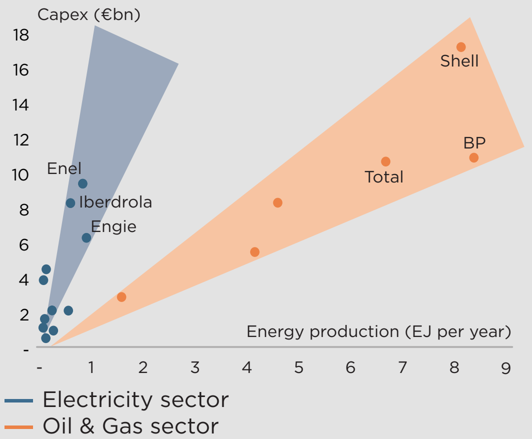
Challenges in the transition

It will, however, be extremely difficult if not impossible to decarbonize the entire world economy with renewable energy like solar and wind over a short period of only 30 years. Today total investments in solar and wind is around USD300 billion per year. This adds 200 GW of capacity generating 360 TWh per year of new renewable electricity production globally in a global energy system of 70,000 TWh[1]. At this run-rate, it will take 150-200 years for wind and solar to reach 50% of a larger future energy system. Even though renewable capacities are forecast to ten double between now and 2050, solar and wind will still represent less than 50% of the total energy mix by then.

[1] Of which electricity generation is 27,000 TWh.

Economic advancement has been associated with the use of ever denser forms of energy from the preindustrial revolution era's use of biomass such as wood to the fuel of the first industrial revolution, coal and later oil, gas, hydro power and nuclear. The current narrative tells us that addressing the climate crisis and reaching the net zero targets of CO2 by 2050 involves going back in time to less dense energy forms like wind and sun. The graph below illustrates the challenge:

Figure 1: Capex vs. energy produced



Source: Morgan Stanley as of Nov. 2020

One dollar of investment into the oil & gas value chain produces an output of energy that is 5-10 times larger than the same investment into solar & wind can deliver. According to Morgan Stanley, the oil company BP produced 8.3 EJ[2)] of energy in 2019. The world's largest renewable energy company NextEra produced 0.2 EJ while Orsted, the world's largest operator of offshore wind farms, produced 0.1 EJ in 2019.

Another way to exemplify the challenge is to consider the aerospace industry. Jet fuel has an energy density of 12,000-watt hours/kg. It is one of the densest energy forms we have and makes it possible to lift even the heaviest planes off the ground. Conversely, lithium-ion batteries have an energy density of at best 300 Wh/kg, one fortieth of modern fuels, and will never be able to lift large planes off the ground.

Because of this challenge it has been suggested that either biogas from waste materials upgraded into liquid transportation fuels or alternatively green hydrogen produced from renewable energy like wind and solar could decarbonize hard-to-abate sectors, such as aviation. However, if these opportunities are to 'move the needle', a vast scale-up would be needed, as the aviation industry consumed 7.9 million barrels per day of jet fuel or 4,840 TWh of energy in 2019[3)].

Decarbonizing aviation using waste materials is completely unrealistic. According to studies, producing 8 mbpd of jet fuel from biowaste would require waste equivalent of 8 times the global mass of corn production every year. Assuming one could source this enormous amount of waste material, it would be 3 times as expensive as the price of regular fuel and only reduce the CO2 emission of aviation by 75%. Producing 8 mbpd of jet fuel from green hydrogen would require an amount of renewable energy that would be 300% of current global production[4)] from solar and wind. It's all very well that governments require – and certain airlines – plan to address their emissions by going "green", but it's totally unrealistic to believe the whole sector can do it.

Huge opportunities despite real challenges

The purpose of this white paper and follow-up papers is to discuss how we move onwards and realize the net zero carbon society by 2050.

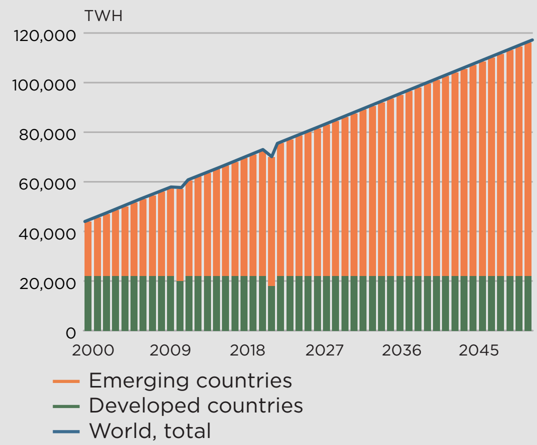
Are there new technologies and processes that will replicate what electric vehicles, solar and wind power has done over recent decades and scale to displace current fossil energy-based processes in hard-to-decarbonize sectors of the economy? What role will hydrogen play and are there any low hanging CO2 abatement opportunities we are overlooking? Finally, as explained below, it is likely that fossil fuels will play a larger role than the current narrative describes, so how do we balance the need for dense energy and at the same time meet the net zero target?

[2)] Symbol for exajoule, energy equal to 10^{18} joules.
[3)] Jet fuel demand is expected to rise toward 20 mbpd by 2050.
[4)] 2,800 TWh end 2020.

The world's dependency on lowly priced abundant energy will not end

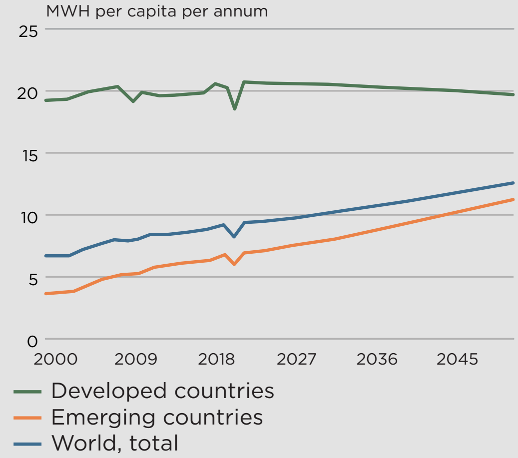
Global energy demand is still growing. The total energy used by mankind stood at 70,000 TWh in 2019 and is growing 1-2 % per year. 40% of the total was consumed by 1.4bn people in the developed world, and the other 60% was consumed by 6.3bn people in the emerging world. In other words, emerging world consumers each used one-third as much energy in 2019 as their developed world counterparts[5]. As the world middle class
continues to grow in the coming decades this ratio is set to reach 50% of their developed world counterparts by 2050. Hence all other things being equal, global energy demand will rise by something like 65% to 115,000 TWh[6]. Total greenhouse gas (GHG) emissions are approximately 50 Giga Ton (GT[7]) per year today and without change in production and consumption patterns this would grow to 80 GT per year by 2050. It would be very dangerous to try to avert the growth in emissions by depriving emerging world consumers of the benefits of modern energy at affordable prices. This is the constraint we must adhere to as we move closer to a carbon neutral society.

Figure 2: Global energy consumption



Source: ThunderSaidEnergy as of Jan. 2021

Figure 3: Energy consumption per capita



Source: ThunderSaidEnergy as of Jan. 2021

Realistically speaking, because coal and lignite are very dirty forms of energy, they should be displaced as fast as possible, and initially be substituted by natural gas, which is a much cleaner form of dense energy. Longer term the associated CO2 emissions from burning gas could be dealt with via carbon capture and storage, but this would require a more level playing field that considered the associated costs of CO2 emissions from different alternatives. In fact, probably the biggest game changer from an environmental point of view would be if the world could agree on setting a price on greenhouse gas emissions because it would promote all sorts of clean energy tech solutions, make fossil fuels less competitive and in general incentivize a broad-based shift away from greenhouse gas emitting activities.

Creating a level playing field

CO2 is what economists call an externality. Emitters derive personal and economic benefits from their emissions, but the climate consequences of their CO2 emissions are incurred by all the world's 7.7bn inhabitants. The most effective antidote to externalities is to tax them. This would entail emitters paying for their emissions, and creating a level playing field and moving away from arbitrary incentives.

[5] In reality much less since much of the production - and therefor energy use - of developed world consumption is outsourced to developing economies, especially China.
[6] In reality probably somewhat lower since moving towards a highly electrified energy system will increase energy efficiency, i.e. we will get more economic growth for a given energy input.
[7] Billion Ton.

Political favoritism through arbitrary incentives is inefficient and expensive. At one end of the spectrum, buyers of some electric vehicles in the United States are currently being awarded tax credits up to $7500 under IRC 30D legislation. It is estimated that an electric vehicle in the US saves 22 tons of net CO2 over its life, compared with a conventional vehicle. Hence this incentive is offering up to $340 per ton of CO2 that is off-set. Similarly, the Blenders Tax Credit of $1/gallon awards the renewable diesel industry the equivalent of $190/ton to offset CO2. This has resulted in 40% of US corn production being used not as food but as feedstuff for the US biofuel industry today. It is more profitable for farmers to harvest subsidies than to grow food.

The numbers get even more ridiculous in Denmark, where electric vehicles as well as hybrids are given large discounts on the registration tax which, because of the overall very high taxes on cars, leads to carbon offset costs to society that approach $3000 per ton of CO2 for the most expensive electric vehicles, assuming the same 22 ton displacement of CO2 as mentioned above[8].

In contrast, there are industrial efficiency initiatives and nature-based technologies which can save vast amounts of CO2 but are currently being awarded no fiscal incentives at all. If incentives are specific and levied case-by-case, then policymakers cannot incentivize technologies they do not know about. Technological advancement comes from below and not from politicians or regulators determining what should work.

Keeping energy prices affordable while decarbonizing the energy system will be a requirement for preserving popular support for the multi-decade long decarbonization process. A rising CO2 price should unlock the lowest cost energy transition to society, as it allows all the different options to compete on cost.

[8] Because the Danish energy mix is much cleaner than the US the CO2 reduction from going from ICE to EV is probably higher, and therefore the cost to society realistically will be lower than $3000/ton but still very high.

The environment does not care how we get to net zero CO2 emissions

The current landscape of ad hoc incentives looks arbitrary and prone to rent seeking where politicians act as kingmakers for a specific set of favored sub-industries and no incentives at all for other sub-industries that may be equally - or more - capable of reducing total CO2 from the global energy system.

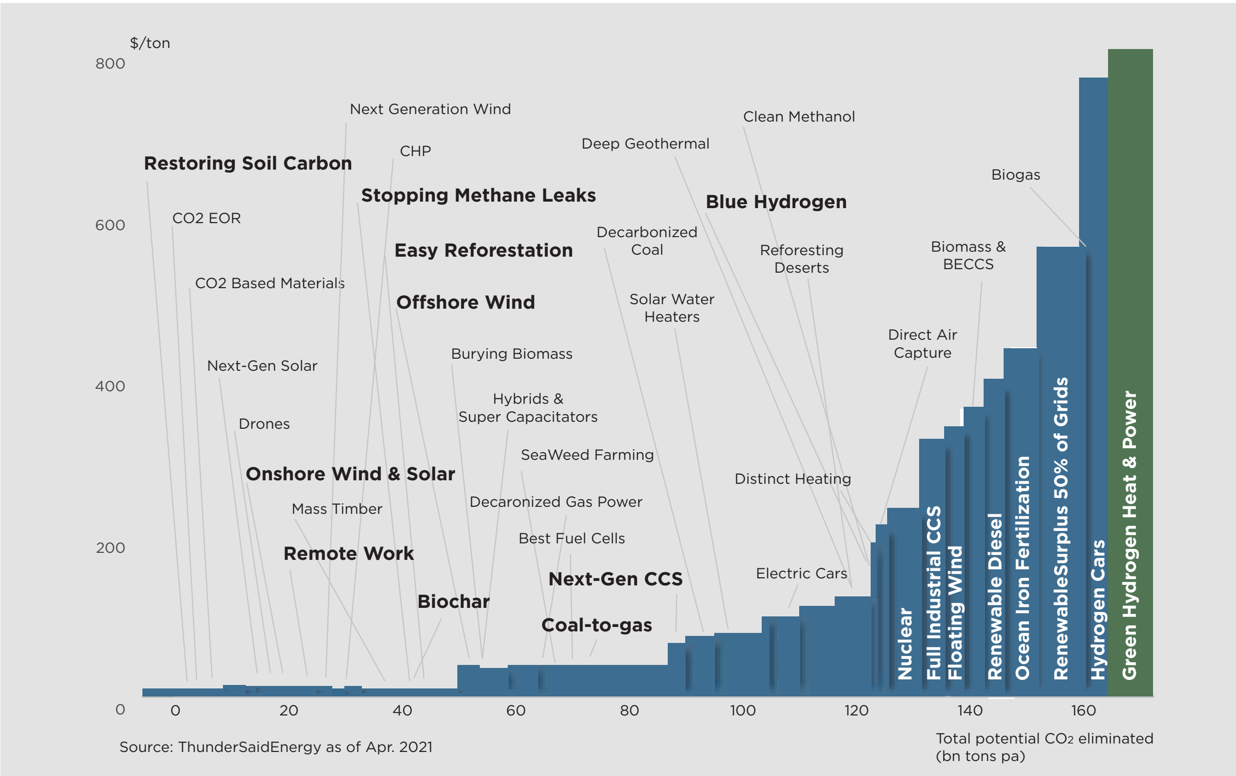
The below graph tries to assess the abatement costs for different technologies and processes. What is the all-in cost of removing 1 ton of CO2 with a given solution? There's a timestamp on this picture, and we should except that as time passes the costs of these solutions will change. At least that's what the experience with wind and solar has shown us. However, there are also very big differences between the cheapest and most expensive abatement solutions today.

The hugely positive conclusion from the analysis presented in the graph is that we can get to net zero and remove up to 80 GT of CO2 per year by 2050 for a total cost to society of somewhere between $50-100 per ton CO2 removed.

A carbon tax would greatly affect the costs of different energy sources and the competitiveness of different technologies and abatement solutions. Under a carbon pricing system, coal and oil lose out, while gas, renewables, and nuclear win. On the other hand, novel technologies that must be at the core of the energy transition like green hydrogen (produced from renewable power), blue hydrogen (produced from gas where the associated CO2 is captured) and carbon capture and storage suddenly become more viable.

A carbon price would affect the costs of products based on the carbon intensity in their manufacturing. Bulk chemical, refining, cement, and steel producers represent some of the most intensive users of energy. Some of these industrial sectors are difficult to decarbonize due to their high energy intensity and because the technologies that could aid their decarbonization, especially hydrogen and carbon capture, utilization, and storage are not yet operating at the necessary scale. Introducing carbon pricing would push these novel technologies in the right direction at a critical point in time in the energy transition.

Figure 4: CO_2 abatement cost



Source: ThunderSaidEnergy as of Apr. 2021

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> **The most obvious and overlooked opportunities for abating CO2 are nature-based carbon sinks. Contrary to the current narrative that we need to employ immature and very expensive technologies to reach net zero soil restoration is a large and low cost nature-based solution to climate change.**

However, the most obvious and overlooked opportunities for abating CO2 are nature-based carbon sinks. Contrary to the current narrative that we need to employ immature and very expensive technologies to reach net zero, as the graph shows, soil restoration is a large and low cost nature-based solution to climate change. One-third of the increase in the atmosphere's post-industrial CO2 derives from the degradation of soils, where organic carbon has fallen from 4% to 1-2% due to mechanized agriculture. Ploughing churns up the soil, exposing it to air, accelerating the decomposition of organic material. Academic studies suggest that soil organic matter could be restored to around 4% over c20-30 years, and possibly higher. This practice can sequester 2-5 tons of CO2 per acre per year, generating carbon credits the farmer can sell to companies in difficult to decarbonize industries. According to academic studies, soil restoration projects could globally absorb 4 billion tons of CO2 per year. This assumes 1T of CO2 uptake per acre per year across the world's 4bn acres (1.7bn hectares) of cropland. On top of farming crops, farmers in the future can increase their incomes by also farming carbon credits.

Secondly, and probably unknown to most, biochar has big potential as a CO2 sink. Biochar is a porous, carbon-rich material, produced by heating biomass in an oxygen-starved pyrolysis reactor. Thus, biochar is a solid, charcoal-like residue, like the one we burn when barbecuing, after biogases and bio-liquids have been drawn away. Biochar can lock up carbon for centuries, keeping it out of the atmosphere, whereas 99% of waste biomass would otherwise have decomposed within 4 years, thereby returning its carbon to the atmosphere. A key property of biochar is its porosity, which enables it to store water, bind nutrients, filter toxins, and house beneficial soil microbes. As a result of these properties, biochar has beneficial effects in agriculture. It is almost presented as a 'miracle substance' by its proponents. In soils, biochar increases water and nutrient retention by around 20%, while decreasing the need for fertilizers and simultaneously increase yields by at least 10%. In animal feed, biochar has health benefits and reduces methane emissions from livestock. It is said that 1 ton of biochar can bind 2 tons of CO2 or methane that would otherwise be released into the atmosphere. Adding 1-3% biochar to cattle feed reduces methane emissions from cows by around 20%. It also appears to increase the rate of nutrient uptake and weight gain in cows by 20-30% at the same time.

The limit to biochar is sourcing feedstock and evaluating the abatement potential is very difficult. In any case biochar results in greater CO2 avoidance than biofuels, and at vastly superior economics. To our knowledge, the recent suggestion by the Danish government that biochar will be a central pillar in the greenhouse gas reduction plan for agriculture towards 2030 is the first formal recognition of the potential of biochar.

Finally, 15 GT of annual incremental CO2 could be sequestered by reforesting 3bn acres, or c8% of the world's landmass, restoring forests that have been lost since preindustrial time. Reforestation also feels intuitively right that the natural world is valuable and that its degradation should be restored. Today, forests cover 30% of the world's land today, or around 10-11bn acres. 200mn acres of forests have been lost since 1997 and deforestation is still occurring at a pace of 0.1% per year, reducing every year the world's natural ability to sequester CO2. We need to reverse this trend and actively manage our forests because forests can be close to permanent carbon sinks if managed correctly, for example by increasing the usage of wood as a construction material in the future: it can store the carbon from sustainable forestry for centuries, while it also displaces more CO2 intensive construction materials such as steel and concrete. Hence one recent study estimated that Europe could save up to 1.3 GT of CO2 emissions by 2040 if wood were used as the primary construction material in 80% of new buildings[9].

> **Agriculture and the forestry supply chain have big monetization opportunities as over time they can build new annuity like business models.**

The consequences of the world turning to the use of these nature-based carbon sinks could be significant. Planting trees is a nascent new carbon abatement business opportunity and furthermore matters for investors and companies, as nature-based carbon sinks can help companies decarbonize inexpensively and push more expensive and complex energy technologies off the cost curve. More companies are realizing this and choosing to protect nature through investments into reputable reforestation funds rather than paying for higher cost new technologies. Several of our portfolio companies are pursuing this as part of their overall effort to decarbonize. Agriculture and the forestry supply chain have big monetization opportunities as over time they can build new annuity like business models. Finally, more broad-based usage of nature-based carbon sinks allow for the continued use of (cleaner) fossil fuels in difficult to decarbonize industries like aviation while simultaneously reaching the goal of net zero emissions.

The EU Emissions Trading System as a lever to global change

Today, there are globally 64 carbon pricing initiatives either already implemented or scheduled. The EU Emissions Trading System is the oldest, largest, and most liquid carbon market globally. The scheme covers ~40% of the EU's greenhouse gas emissions covering sectors like power and heat generation, energy-intensive industry sectors like oil refineries, steel, aluminium, cement, chemicals, and commercial aviation between member states. From 2022 it is expected the system will be expanded to also include maritime transportation, and there is growing political willingness to further expand the scheme to larger parts of the economy over time. Recently both The Greens as well as the CDU in Germany have proposed radical makeovers of Germany's tax system wanting to introduce a general and high CO2 tax that is consistent with climate targets. Many other European countries are having similar discussions. At the same time, the EU parliament is discussing a Carbon Border Adjustment Mechanism that basically would put imports on an even basis with products produced in the EU by levying a tax scaled to the CO2 intensity of the imported goods. This will be tricky as it could violate World Trade Organization rules, but both recent Chinese commitments to becoming CO2 neutral by 2060 and President Biden's election win increases the likelihood that CO2 pricing somehow will be integrated into cross border trade flows longer term, most likely by more countries introducing carbon taxes.

Whilst carbon prices globally vary materially, nowhere are prices yet high enough to incentivize a net zero pathway. In an academic study co-authored in 2020 by Noah Kaufman, who is serving in the Biden-Harris Administration, the necessary price of carbon for achieving net zero by 2050 is estimated to be $50/ton by 2025, increasing to $100/ton by 2030. Elsewhere, the IMF has estimated that $75/ton is necessary to meet the Paris Agreement target of limiting global warming to 2°C over preindustrial levels. This seems consistent with the analysis shown in chart 3 above, indicating that at around $75-100, solutions would be available to abate 80 GT per year by 2050, i.e. realizing a net zero carbon world by midcentury.

The EU Emissions Trading System is closest to achieving this, trading above €50/ton currently. This represents a very large increase from prior years and reflects the fact that the system is constructed in such a way that scarcity increases over time. Furthermore, a revision of the EU Emissions Trading System is planned by July

[9] Amiri. A. et al. (2020). Cities as carbon sinks—classification of wooden buildings. Environmental Research Letters, 15, 094076.

2021 to ensure it is in line with the increased 55% emissions reduction target by 2030. Several changes are also expected that will reduce the allowances even further, giving good reason to expect that the carbon market has entered a multi-year structural deficit, driving up prices. The next three years threaten to deliver a shortage that has never been seen before in the carbon market. That deficit, combined with draconian penalties to companies that are non-compliant, could mean prices could go to extreme levels without political interference.

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The EU could soon become the first geography that would operate under a CO2 price sufficiently high to ensure longer-term compliance with 2050 targets of net zero emissions.

It is likely, therefore, that the EU could soon become the first geography that would operate under a CO2 price sufficiently high to ensure longer-term compliance with 2050 targets of net zero emissions. High CO2 prices would ensure rapid power sector switching from coal to gas (going from coal to gas reduces emissions by 60%) and accelerate investments into energy efficiency technologies, renewable energy, blue & green hydrogen, and carbon capture technologies. However, in order to reach the end goal, the world needs to realize that reforestation projects and other carbon sinks like soil and oceans will be required to meet the 2050 target of net zero CO2 emissions.

Conclusion

The transition to a sustainable future will be the biggest investment theme of our lifetime. Value creation and destruction will be massive across industries and countries. The current policy setting is not capable of getting us to net zero, but hopefully – and sooner rather than later – policy setters will realize we need to reactivate and nudge the earth's climate system in the right direction by the stimulation of natural carbon sinks that have been lost over the last 200 years of industrialization and population growth.

Today, our investment focus is primarily on companies that develop renewable power equipment and utilities with growing renewable energy capacity. Within a couple of decades, it's almost a given that the market for carbon credits will be amongst the largest commodity markets and that companies that facilitate the transition to a sustainable future will be amongst the largest in the world. We are working hard on identifying these companies ahead of time.

What exactly is a ton of CO2?

A ton of carbon dioxide is a one-way trip between Paris and New York by plane. In terms of volume, this represents a cube the size of a three-story building, or 8.20 meters in edge length.

The Next Decade belongs to the Long-Term Investor

By Peter O'Reilly
Portfolio Manager, C WorldWide Asset Management.

Executive summary

- We live in a world dominated by social immediacy. Being online most of the time makes us impatient. As a society, we overvalue immediate rewards and forget the long-term perspective. This leads to a "sandbag" approach to generational challenges, where quick fixes are preferred over long-term viable solutions.

- This short termism is a problem as it undermines future economic growth as the lack of long-term investments leads to slower GDP, higher unemployment and lower investment returns.

- In equity markets, stock-picking driven by fundamental analysis accounts for only 10% of the overall market turnover and the average holding period has fallen over the past decades from a peak of 7.5 years to an average of 6 months. Looking at sell-side research analysts, they – guided by their perceived client needs – focus on periods measured in quarters rather than years with less focus and knowledge on the 5-10-year perspective.

- At a corporate level, the rise in short termism is reflected in a decline in the average tenure of a CEO. Several studies have shown that the average tenure of a CEO in major US companies has fallen from around 6-7 years a decade ago to approximately 5 years today. Management teams are under external pressure to perform in the short term, thereby prioritizing short-term capital returns, the company's share price and making quarterly earnings forecasts rather than important longer-term strategic goals. This eventually leads to lower long-term value creation.

- Analysis shows that the biggest factor associated with lower long-term value creation is overdistribution of capital. We encourage companies to return capital to shareholders and companies must pay high attention to their cost of capital, although not at the expense of future growth.

- History shows that over the longer term, there are very few companies that can sustain and create attractive returns. Studies by McKinsey show that companies with a truly long-term culture and strategic thinking outperformed other companies by 36% in terms of earnings over a 15-year period. Furthermore, from a societal perspective, if all companies demonstrated long-term thinking, they could create an additional 1 million jobs per annum in the US alone.

- Looking at time horizons from the perspective of asset owners, it is a paradox that the average length of liabilities of sovereign wealth funds is approx. 50 years, endowment, insurance and pension funds from 20 years plus, while investment managers often are being evaluated on a one-year result.

- However, the good news is that short termism creates opportunities for active managers, and we try to exploit this. We believe in the old adage “time in the market vs market timing”. It is a much more predictive strategy to generate alpha by moving out the time curve than engaging in short-term trading strategies. On a day-to-day basis, the return differential between the good and bad companies are more or less zero, whereas on a 10-year time horizon the spread is massive. This creates the opportunity for skilled stock-pickers. At C Worldwide, our secret sauce is seeking to understand the earnings power of a company five years out or longer and to try to evaluate the sustainability of its business model. Understanding what is essential long-term information and what is short-term noise.

The debate over short versus long-term investment is more relevant than ever today. For over thirty years we have worked hard to find long-term sustainable investments, but in recent years we have observed that the market and its participants have moved to ever shorter mindsets and holding periods. Today, the largest share of total stock market turnover is driven by quantitative, passive, and hedging strategies, where the investment horizons are compressed and long-term fundamental considerations are minimal. While we believe that this trend is a headwind both for stock markets and broader society, it does create opportunities for the longer-term investor.

What is Short Termism?

A short-term strategy is one that focuses on what is going to happen sooner rather than what is going to happen over time. In today’s society, short termism has been compounded by the decline in our willingness to wait for things. This has been driven by the “phenomenon of social immediacy”, whereby we have moved towards an always-on, always available digital world. No longer do you have to wait for a retailer to have the latest fashion on the shelves. You can just buy it online. The same goes for TV shows, whereby previously you would have to wait a week for the next episode of your favorite show, today you can stream them all at once.

The overall effect is that society is overvaluing immediate rewards and forgetting the long-term plan. This leads to what the futurist Ari Wallach refers to as the “sandbag strategy” to generational challenges. One example is a politician seeking to be re-elected in a town with a flooded riverbank chooses to install sandbags instead of repairing the river once and for all, because the repair costs would create an unpopular tax increase that could jeopardize his/her re-election prospects. As these easy quick fixes dominate our modern world, you could ask if great projects like the Panama Canal would ever stand a chance of being built today?

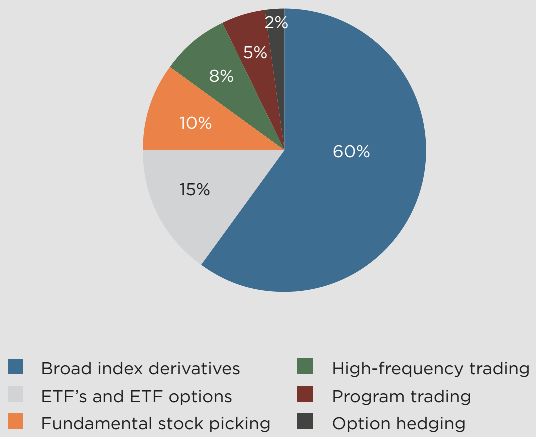
From a financial market perspective short termism – also called quarterly capitalism – is defined by a company’s fixation on managing for the short term with decisions driven by the need to meet quarterly earnings at the cost of long-term investments. Short termism is usually a hindrance as it has the potential to undermine future economic growth as the lack of long-term investments ultimately leads to slower GDP, higher unemployment and lower investment returns.

Why is Short Termism happening?

We believe the rise of short termism is happening for several reasons. Firstly, there has been a change in the market participants. As figure 1 on the next page shows, according to data from the NYSE and JP Morgan, stock-picking based on fundamental analysis only accounts for 10% of the overall turnover in the equity market. The rest is made up of equity-derivatives, ETF's and other non-fundamental investors.

Figure 1: Change in market participants

Share of total equity trading

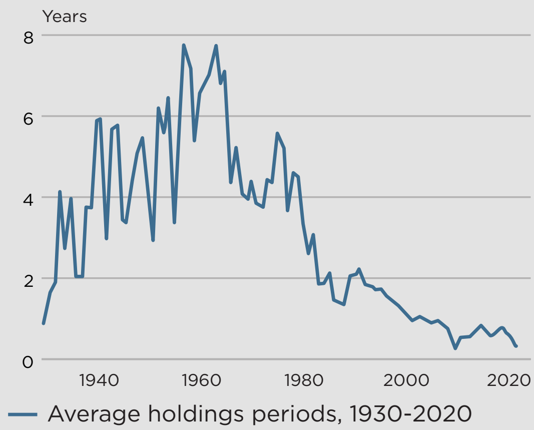


Source: Financial Times and JPM estimate as of Nov. 2019

Another change is a shorter holding period. As shown in figure 2, average holding periods have compressed over past decades from a peak of around 7.5 years to around 6 months. Part of the reason is the change in market participants but also the average time horizon of portfolio managers (PM) has become much shorter. This is highlighted by a survey by Mercer and the Generation Foundation which found that the average global PM holds a portfolio for 1.5 years. Furthermore, the study found that the average ESG fund, which invests in the long-term interests of the environment and society, only holds its portfolio for 2.5 years. This seems to be contrary to the objective of most long-term asset owners, be it pension funds, insurance funds, foundations, private family or sovereign wealth funds, which need to optimize returns over a 20 plus years horizon.

At a corporate level, another contributor to the rise in short termism has been the decline in average tenures of CEOs. Several studies have shown that the average CEO-tenure in major US companies has fallen from around 6-7 years a decade ago to approximately 5 years, while average turnover has increased by 13%. In "The CEO Life Cycle", a study of CEO performance over time by James M. Citrin, Claudius A. Hildebrand, and Robert J. Stark, the authors observed that many CEOs enjoy their greatest years of value creation only after their first decade in office. It is difficult to plan and reach long-term goals when your tenure is too short.

Figure 2: Shorter holding periods



Source: NYSE and Refinitiv as of Dec. 2020

It would be remiss to discuss the rise of short termism without referring to the role of the sell-side financial community. Most sell-side analysts guided by their perceived client needs tend to focus on periods measured in quarters rather than years. While they generally have an impressive knowledge and vision of the coming quarters, many need to pause for thought when asked "what do you like on a five/ten year view"? Furthermore, their views tend to be influenced by the recent share price action. As an example, figure 3 on the next page shows the S&P forecast from strategists against the actual performance of the S&P 500. It is almost impossible to set the two lines apart, so one might ask is the opinion driving price or is it the other way around?

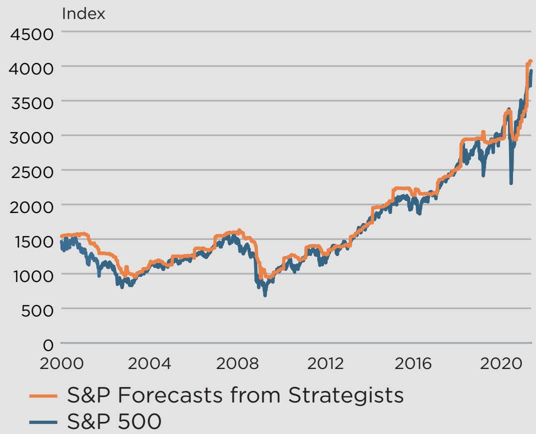
"

The average ESG fund, which invests in the long-term interests of the environment and society, only holds its portfolio for 2.5 years. This seems to be contrary to the objective of most long-term asset owners, which need to optimize returns over a 15-30-year time horizon.

Interviews conducted by KPMG reveal that the predominant clients of equity research are short-term investors with no interest in the prospects of a company beyond a year. Furthermore, they found that investors with long-term liabilities also ask for short-term research. This perhaps rationalizes the emphasis on short-term research by the sell-side analysts.

At C WorldWide, we are looking for information that we refer to as "lasting knowledge", i.e. information with a minimum shelf life of 5 years.

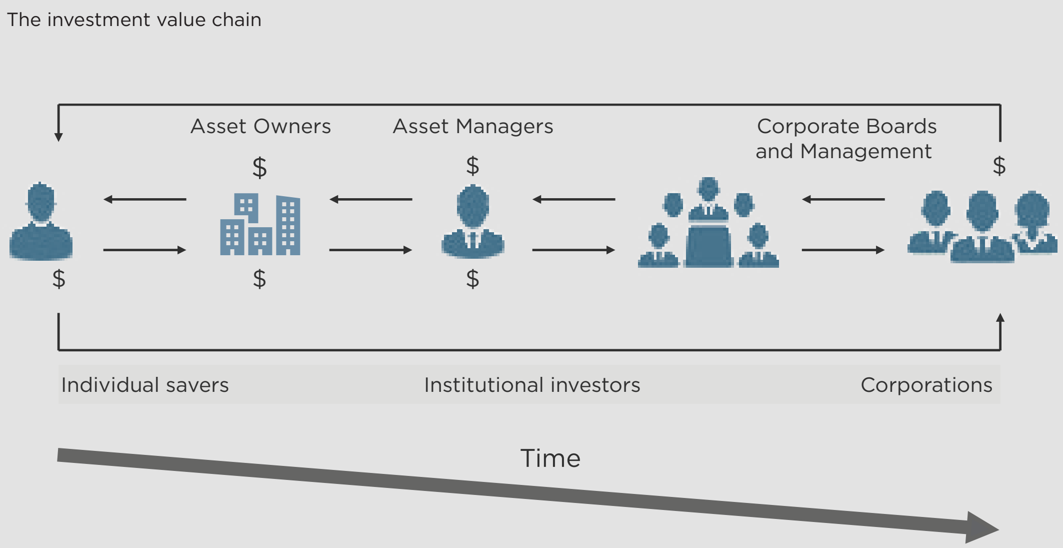
Figure 3: Near sighted analysts



Source: Bloomberg, C WorldWide as of Dec. 2020

Finally, and most importantly, one of the largest contributors to short termism is what "Focusing Capital for The Longer Term" (FCLT) refers to as the time-misaligned investment chain – see figure 4 on the next page. FCLT highlights that much of the capital in the chain originates from savers whose interests are long term. Yet, today few individuals directly invest their own savings. Rather, the majority of capital works its

Figure 4: A time misaligned investment chain



Source: FCLT as of Nov. 2019

way through the hands of multiple financial market participants before the individual savers realize a return from the net cash received on their effective investments. Unfortunately, as capital makes its way through the system, it is increasingly subjected to value-destroying, short-term forces and the savers' long-term interests are lost. Owners put pressure on fund managers leading to imperfect incentive structures, which in turn leads fund managers to put pressure on corporations and so the cycle becomes a vicious one. This issue becomes clear: if we consider that the average liability length of sovereign wealth funds is approx. 50 years, endowment, insurance and pension funds 20 plus years, while a fund manager who is chasing a one-year performance incentive in November could have a performance horizon of less than two months.

What is the impact on companies and financial markets?

For companies, short termism leads to an extreme focus on the share price, which in turn leads to greater pressure on management. Today, management teams are often more preoccupied by their share price and making quarterly earnings forecasts potentially leading to lower long-term value creation while prioritizing payouts over reinvestment.

As testament to this, McKinsey and FCLT have researched the 'greater pressure on management' concept – see figure 5 on the next page – and found that 87% of management teams feel pressured to demonstrate strong financial performance within 2 years or less. 65% interviewed found that short-term pressure has increased over the past 5 years. Even more worrying, companies without a strong long-term culture said that they would delay a new project to make quarterly earnings forecasts even at the expense of longer-term value creation.

This pressure has also led management teams to over emphasize and target analyst metrics such as capital returns instead of more strategic goals. We encourage companies to return capital to shareholders and companies must pay high attention to their cost of capital, although not at the expense of future growth.

Figure 5: Greater pressure on management teams

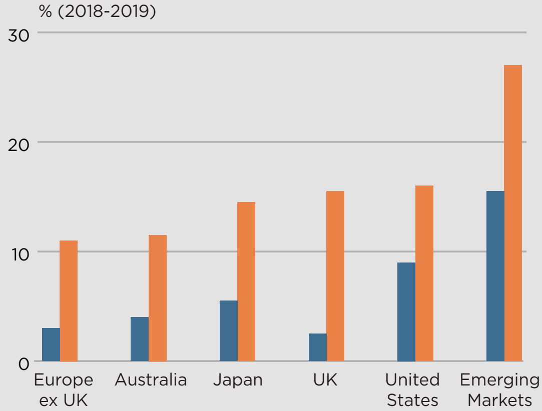
Surveys show that executives are feeling pressure from short termism

87%	65%	55%
Feel most pressured to demonstrate strong financial performance within 2 years or less	Say short-term pressure has increased over the past 5 years	Companies without a strong long-term culture say their company would delay a new project to hit quarterly targets even if it sacrificed some value

Source: McKinsey, FCLT Global as of Sep. 2016

> **"Today, management teams are often more preoccupied by their share price and making quarterly earnings forecasts potentially leading to lower long-term value creation while prioritizing payouts over reinvestment.**

Figure 6: Focus on analyst metrics - buy backs

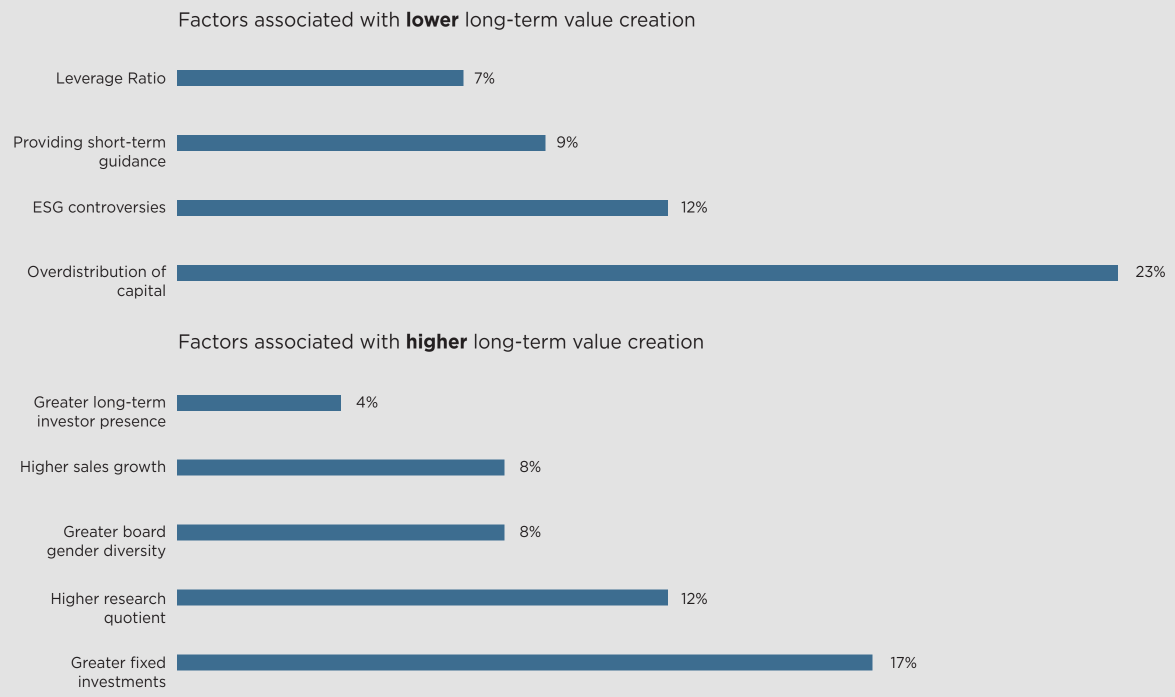


Capex growth
Payout growth*
(*dividends and share buybacks)

Source: Datastream, Citigroup, C WorldWide as of Dec. 2019

As shown in figure 6, companies in the S&P 500 in 2019 repurchased shares for close to a trillion US dollars and paid out close to 500 billion US dollars in dividends. That equates to almost 98% of 2019 earnings. The growth in payouts has outgrown capex growth, and capex growth is what drives future growth.

Figure 7: Leading to lower long-term value creation



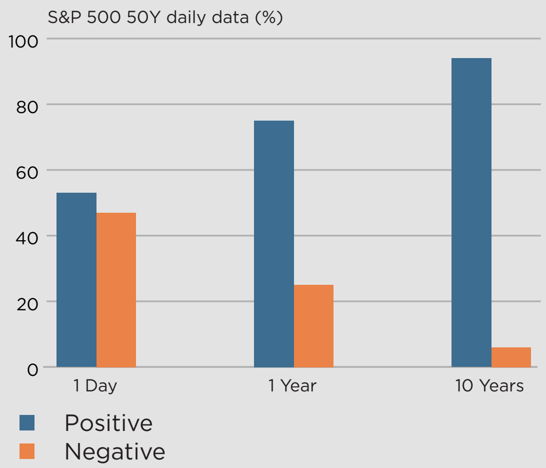
Source: FCLT using MSCI ACWI universe and using ROIC and TSR as ranking variables, as of Dec. 2019

At C WorldWide we manage capital for the long term and we look at factors associated with longer-term value creation. In our view, the narrow focus on analyst metrics such as payout growth, risks not only reducing the future earnings growth of a company, but also of the overall economy leading to lower long-term value creation. Figure 7 on the next page shows significant evidence that the biggest factor associated with lower long-term value creation is overdistribution of capital. Likewise, the biggest factor associated with higher long-term value creation is greater fixed investments.

How do we think about investments horizons?

First, we are big believers of the old adage "time in the market vs. market timing". Time horizons matter and by extending them you create opportunities. Figure 8 proves this and shows that if you invested in the S&P 500 with a one-day time horizon measured over 50 years, the outcome is 53% positive and 47% negative –almost a flip of a coin. Conversely, longer-term

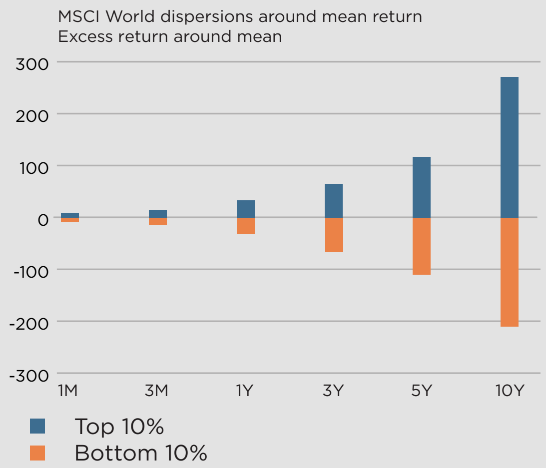
Figure 8: Time in the market vs market timing



Source: Bloomberg as of Jan. 2021

investment periods show that the investment opportunity gets better with the passing of time. For example, after 10 years you would have had a 94% opportunity for a positive investment experience.

Figure 9: Time horizons matter



Source: Bloomberg and C WorldWide as of Dec. 2020

Also, time horizons matter for a different reason, as depicted in figure 9 above.

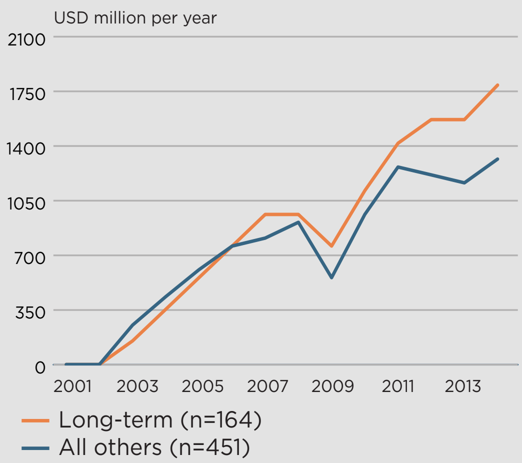
As portfolio managers we try to take advantage of the market dispersion over time by picking the winning companies while avoiding the losers. We are strong believers that over the longer term, there are few companies that really can create attractive returns. Figure 8 shows the dispersion of returns between the top decile and bottom decile of constituents of the MSCI AC Word Index. Over a 1-month period the difference between the top 10% and the bottom 10% is around 17%. But over time the spread keeps increasing. Over a 10-year period there is a massive spread between the top and bottom 10%. As active managers we try to exploit this. It is much easier to achieve alpha by moving further out the time curve than when investing with short holding periods.

The sustainable appeal of long-term investing

We feel strongly that the impact of short termism or importance of taking a long-term view often gets overlooked when considering ESG matters. Figure 10 and 11 show the results of a study of over 600 US companies over a 15-year period.

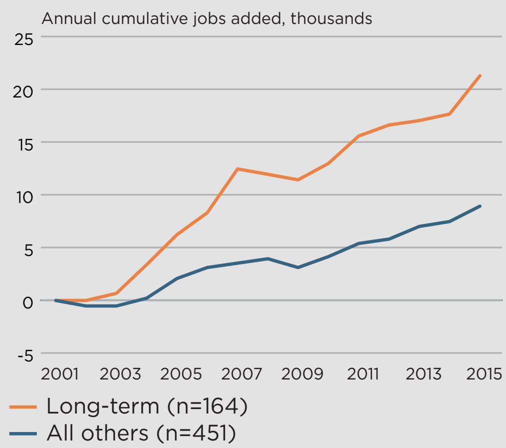
The companies were divided into two groups, one deemed long-term companies using several key factors with the remainder being all other companies. Among the factors used were above average spending on research and development and capital expenditure, not managing earnings on a quarterly basis, higher sales growth and a diverse board representation. These

Figure 10: Average company earnings



Source: McKinsey Corporate Horizons paper as of 2017

Figure 11: Average job creation



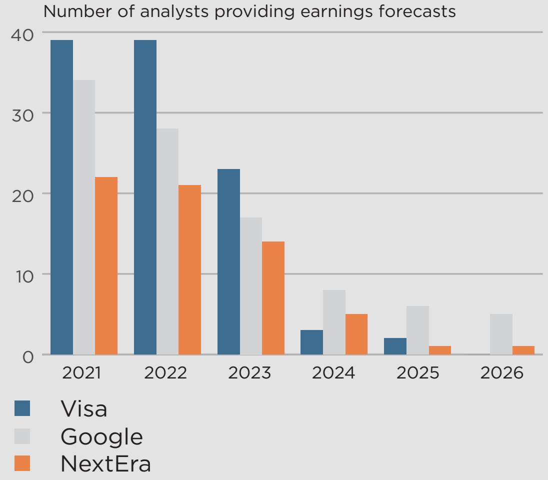
Source: McKinsey Corporate Horizons paper as of 2017 companies were selected on a sector neutral basis. What McKinsey found was that the long-term orientated companies outperformed all the other companies by 36% in terms of earnings over a 15-year period. Perhaps more importantly, these companies created nearly 12,000 more jobs. This can be explained by the apparent willingness of long-term companies to invest also in difficult times and thus creating more economic value over time. From an economic point of view, if all companies behaved like long-term companies, the study concluded that the US would have created an extra 1 million jobs annually, equating to 1 trillion extra of GDP value over that 15-year period.

According to the UN Sustainable Development Goals (UN-SDG), goal number 1 is zero hunger and number 2 is zero poverty while goal number 8 relates to decent work and economic conditions. In our opinion, these are among the fundamental building blocks to many of the other goals. In other words, if you don't achieve the basic goals 1 and 2, and you don't have job creation, the other goals are likely to be more difficult to achieve. Therefore, we think that long-term investing and sustainability go hand-in-hand.

Short Termism Creates Opportunity

A key take-away is that short termism can create opportunities for the longer-term focused investor. To illustrate, figure 12 shows three of the companies in our global equity strategy and the number of analyst forecasts for each calendar year. As can be seen in year one there are 39, 34, and 22 earnings forecasts for Visa, Google and NextEra, respectively. These are relatively high coverage ratios. But note how the coverage declines as you move out to year 2025 and 2026, the number of forecasts decline to a maximum of 6 and 5 for each year for Google and 2 and 1 for Visa and NextEra, respectively. Are the business models of Visa, Google and NextEra that complicated and unpredictable that they do not warrant explicit forecasts? We think not. More likely, the analyst community is neither motivated nor incentivized to make explicit forecasts beyond the immediate future. We believe this creates opportunities. At C Worldwide, when looking at a potential investment candidate we try to understand the earning power of the company five years out or longer and try to evaluate how sustainable those earnings are likely to be. This long-term perspective is one way we strive to add value and generate alpha.

Figure 12: Short termism creates opportunity



Source: Bloomberg as of Jan. 2021

Our Process

When buying a company we look for the power of compounding. In this journey, we analyze and evaluate the earning power of a company for at least a 5-year period. We take an owner approach to capital allocation and we prioritise a strong company culture. Our investment companies should have strong, growing addressable markets – for example products that are benefitting from the transition from offline to online. Also, for companies that are exposed to strong generational themes and trends – for example companies exposed to the theme 'digital society'. Not least, we look for a favorable market structure and ideally market leaders that have above average and sustainable revenues and earnings growth, and most importantly a sustainable approach to capital allocation.

Our three major sources of alpha are to identify the compounding trajectory for a company preferably at an early but still at a well-defined, low risk stage, to have an independent opinion on available information combined with an understanding of what is important and what's not – and lastly, the long-term perspective.

Longevity, sustainability, growth, and good returns go hand-in-hand. For us, this is not a new insight. This is how we have always worked. We are convinced that this will become clearer and more important in the coming decades, and we believe that investors have everything to gain by understanding the dynamics between long-termism and short-termism.

C WorldWide Global Equities ex. Tobacco

Quarterly comment

Investor confidence is rising as the world economy recovers with vaccination levels going up. Paradoxically, the key US 10-year bond yield declined in an environment of strong economic growth, where GDP in the US grew 10%, companies reported strong earnings growth, South Korean exports rose to a 10-year high and economic sentiment in Europe almost reached a 35-year high.

In the quarter, the strategy returned 8.0%, trailing the MSCI AC World Index, which returned 9.0%. The underperformance can largely be attributed to weakness in some of our Asian investments, partly due to the stronger dollar. Some of the best contributors were Alphabet which reported very strong numbers with revenues growing 35% driven by Search growing 30%, YouTube 49% and Cloud 46%. Microsoft and Amazon were also strong performers as the Covid pandemic is accelerating the digital transformation and transition to the cloud. Novo Nordisk, the second-best contributor during the quarter, is increasingly viewed as an obesity company. The company released data showing that its new Wegovy drug results in 35% of patients losing more than 20% of their body weight and 11% of patients losing more than 30%. The largest detractors from performance were Ping An, Sony and Fiserv. Ping An's shares have suffered during 2021 as the company is taking the short-term painful step of culling its large pool of insurance agents to increase productivity. In the short term, this means a decline in sales, but increased focus and digitalization should improve sales productivity in the medium term. Following its Corporate Strategy Meeting and IR meeting Sony's shares have been stagnant as investors lack short-term catalysts. Despite this and component shortages hitting the rollout of PS5, Sony should be able to deliver solid profit growth in the medium term driven by monetization of its IP.

Investment strategy and portfolio changes

No portfolio changes were made in the quarter. Two key observations from the quarter are 1) the continued acceleration of the digital transformation. As one CEO commented on a conference, all companies now need to be "the best possible digital self"; 2) The CFO of ASML referred to "semiconductor-sovereignty", the need for countries to be more self-sufficient and not solely rely on long Asian-based supply chains to secure semiconductor chips. These two long-term trends should support several of our holdings in the coming years.

C WORLDWIDE GLOBAL EQUITIES EX. TOBACCO COMPOSITE

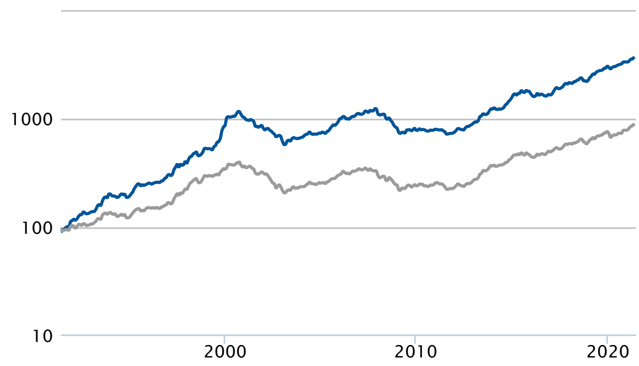
GROSS OF FEES IN AUD AS OF 30 JUNE 2021

INVESTMENT PHILOSOPHY

Name	**C WorldWide Global Equities Ex Tobacco**
Launch date	31 May 1991
Benchmark	MSCI All Country World incl. net dividends
Read more	www.cworldwide.com

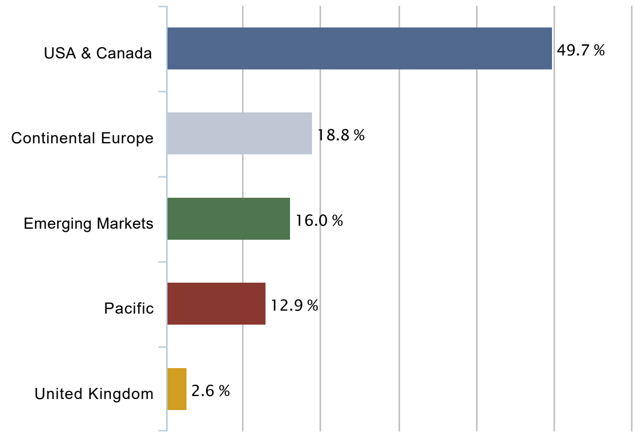
The strategy aims to achieve long-term capital growth exceeding the return of the market with a moderate risk profile as measured by standard deviation. The portfolio consists of 25-35 high conviction global large cap stock picks that ensure a sufficiently high-risk diversification. There are no geographic or sector restrictions in the strategy. This fact sheet has been prepared by C WorldWide Asset Management Fondsmaeglerselskab A/S and is for information purposes only.

INVESTMENT RETURNS



Portfolio 3617.3 % Benchmark 803.5 %

GEOGRAPHIC DIVERSIFICATION



RETURN & RISK

	Q2	YTD	1 Y	3 Y	5 Y	10 Y	Lifetime
Portfolio (gross) (%)	8.0	11.4	23.0	18.1	17.8	17.0	12.7
Benchmark (%)	9.0	15.4	27.7	14.0	14.4	13.9	7.6
Relative performance (%)	-1.0	-4.0	-4.7	4.1	3.4	3.1	5.2

	3 Y	5 Y	10 Y	Lifetime
Std. dev. p.a. portfolio (%)	9.4	9.2	10.4	13.6
Std. dev. benchmark (%)	11.8	10.2	10.1	12.1
Beta	0.7	0.8	0.9	1.0

Periods longer than 1 year are shown annualized

TOP 10 HOLDINGS

	Share in %
Alphabet	6.5%
HDFC	6.4%
Visa	6.3%
Microsoft	5.3%
Amazon.com	5.1%
Thermo Fisher	4.8%
The Home Depot	4.6%
Novo Nordisk	3.9%
Sony Group	3.9%
Nestle	3.7%

CONTRIBUTION (3 MONTHS ROLLING)

Top/Bottom 5	Contribution	Return
▲ Alphabet	1.3	22.9
▲ Novo Nordisk	0.9	25.0
▲ Microsoft	0.8	16.8
▲ Visa	0.7	12.2
▲ Amazon.com	0.6	12.8
▼ Ping An Insurance	-0.4	-15.0
▼ Sony Group	-0.3	-5.8
▼ Fiserv	-0.2	-8.9
▼ Siemens	-0.1	-2.3
▼ Ecolab	-0.1	-2.2

All figures are based on past performance. Past performance is not a reliable indicator of future performance. The return may increase or decrease as a result of currency fluctuations. The figures are based on a composite. The figures are gross of investment management fee and performance fee, if any. Other fees, incurred by the investor, such as custodian fee and transaction costs, are not included.

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Remarks to performance: All figures are based on past performance. Past performance is not a reliable indicator of future performance. The currency is AUD. The return may increase or decrease as a result of currency fluctuations. The gross figures are gross of investment management fee and performance fee, if any. Other fees, incurred by the investor, such as custodian fee and transaction costs, are not included in the gross figures. The net figures are based on the actual performance including costs of all portfolios.

C WORLDWIDE ASSET MANAGEMENT FONDSMAEGLERSELSKAB A/S

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