



GO LONG

The case for investing in long-termism



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ABOUT THIS PAPER

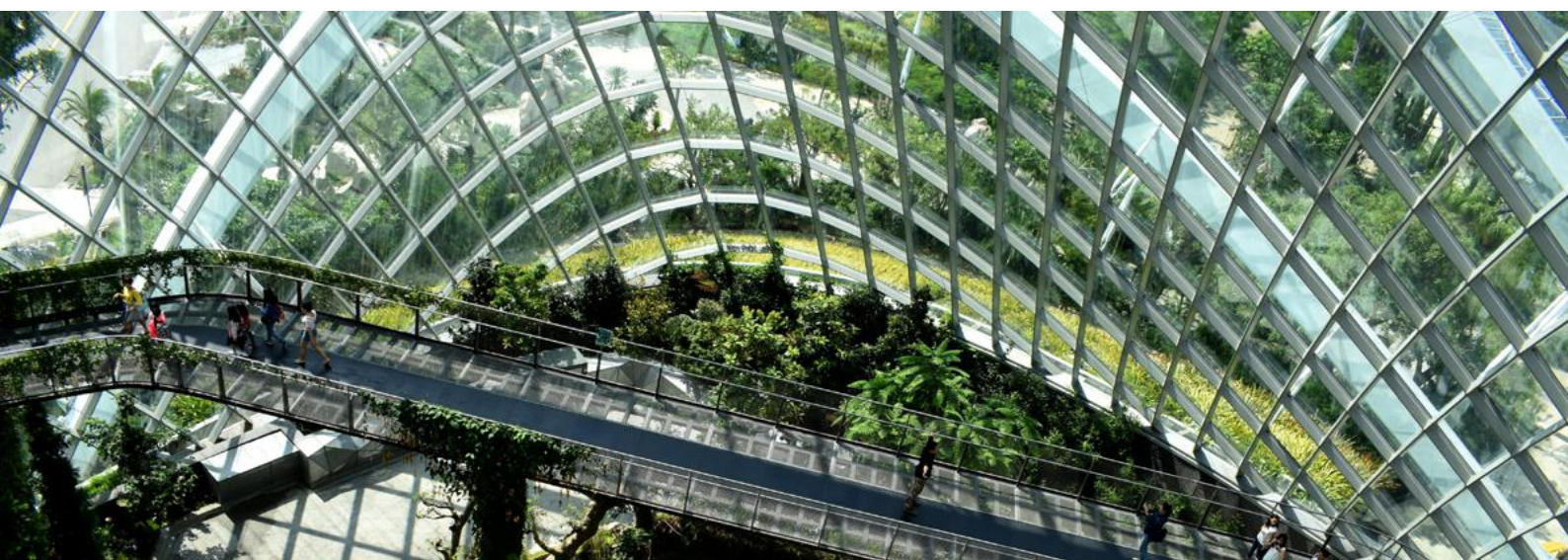
This paper is the product of a knowledge partnership between Volans and Climate-KIC's Long-Termism Deep Demonstration. It builds on the body of knowledge and thought leadership about systems change that Volans has developed as part of the Tomorrow's Capitalism Inquiry.¹

The Tomorrow's Capitalism Inquiry was prompted by a simple realisation: the approach to 'sustainability' embraced by large swathes of the corporate world since the 1990s has led to incremental improvements in the environmental and social performance of many individual businesses, but it's not adding up to a sustainable economy. As a result, many indicators of social and environmental health continue to move rapidly in the wrong direction, and long-term, systemic risks continue to build, posing a major threat to the future profitability – viability, even – of many businesses.

To put it bluntly, the theory of change that has driven the corporate sustainability movement over the last 25 years isn't working – which is why, in 2018, Volans Founder John Elkington issued a 'recall' of the Triple Bottom Line ("People, Planet, Profit"), a management concept he coined in 1994.² We issued the recall not because people, planet and profit are no longer relevant categories, but because the Triple Bottom Line as a tool for changing decision-making has proven inadequate in the face of the overwhelming pressure faced by CEOs and CFOs to focus on the single "real" bottom line: financial profits.

As we immersed ourselves in exploring new thinking and approaches to systems change, we became aware of EIT Climate-KIC's Long-Termism Deep Demonstration. The Deep Demonstration is a bold attempt to change the global socio-economic system through a portfolio of innovative experiments targeted at sensitive intervention points.

Based on our mutual interests in systems change and shifting paradigms, we agreed to form a partnership to exchange knowledge and thinking, and for Volans to help strengthen the strategic narrative underpinning the work of the Long-Termism Deep Demonstration. This paper is the result of that partnership. We are grateful to EIT Climate-KIC for their support of this work and to all the members of the Long Term Alliance³ for sharing their ideas and feedback.



¹ <https://volans.com/tomorrows-capitalism-inquiry/>

² <https://hbr.org/2018/06/25-years-ago-i-coined-the-phrase-triple-bottom-line-heres-why-im-giving-up-on-it>

³ <https://medium.com/futures-in-long-termism/about>

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The ability to think and care about the long term is sometimes described as a luxury – something for people who don't have to worry about making ends meet in the here and now. But caring about the long term is also a burden – especially today.

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The story of capitalism over the last 50 years has been dominated by the growth of finance and the increasing myopia of financiers. Short-termism is now hardwired into our political, financial and economic systems in a way that undermines our ability to manage or mitigate the systemic risks that threaten our future.

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The realisation that our political, financial and economic systems are nested within planetary boundaries is a reality we've been struggling to come to terms with for half a century. But intellectual models that integrate the reality of biophysical limits are finally gaining traction.

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To instill long-termism in our financial, economic and political systems, we will need to adopt a strategy of intervening across multiple domains concurrently. Some of those interventions will be about transforming the “core” of our current systems. Others will be about experimentation at the “edge” to develop viable alternatives to how finance, business and politics are practiced today.

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INTRODUCTION

“How did you go bankrupt?” Bill asked.
“Two ways,” Mike said. “Gradually, then suddenly.”

Ernest Hemingway, *The Sun Also Rises*

In some ways, it would be easier if we weren't wired to care about the long term.

Climate change. Biodiversity loss. Social and racial inequality. Declining levels of trust. Inflation. Antimicrobial resistance. Soil degradation. Pandemics. Financial crises. Conflict. Never has our individual and collective wellbeing faced such a “wicked” set of threats.

All these issues have something important in common: they are problems that unfold “gradually, then suddenly”.

Our ecological and social support systems have a remarkable capacity to absorb and adapt to the pressure we put on them until, suddenly, they can't take any more. At that point, it is generally too late to avoid catastrophic consequences. It is the slowness of the build-up, combined with the suddenness of the breakdown, that makes these threats so difficult to manage.

OUR DUAL NATURE

Humans are paradoxical creatures. We care about long-term outcomes – for ourselves and for others. We want to make it to old age and to enjoy health and happiness when we do. We want the same for our children and grandchildren – and for generations of future humans we will never meet. We are compassionate by nature.

And yet, we behave as though the long-term future scarcely matters. We are prone to what behavioural economists call ‘hyperbolic discounting’⁴ – a tendency to assign almost no value to long-term effects in our decision making. And we have inadvertently hardwired this tendency into our political, financial and economic systems.

This inconsistency in human nature – compassionate and long-sighted in our aspirations, irrational and short-sighted in our decision making – is a result of how our brains have evolved over millennia. There is, however, nothing inevitable about how this tension plays out across our political, financial and economic systems. We can choose to design systems that amplify our innate short-termism or we can choose to design systems that favour our capacity for taking a long view.

HOW MONEY THINKS

This paper puts the financial sector in the spotlight for the simple reason that finance is both the lifeblood and the beating heart of capitalism. In a world where capitalism is unrivalled – ‘the sole remaining mode of production’, as Branko Milanovic puts it⁵ – no sector is more important in determining the outcomes our economies and societies generate. **Money may be unequally distributed, but the workings of the money system affect all of us regardless. Understanding how money thinks – and why it thinks the way it does – is a crucial starting point for any effort to effect systemic change.**

In the next section, we tell the story of how short-termism came to be embedded in today's financial system. Then, in part 3, we chart the emergence of a different economic paradigm – one that recognises the reality of biophysical limits. Finally, in part 4, we lay out a strategy for defeating short-termism and creating a resilient, regenerative economy.

4 https://en.wikipedia.org/wiki/Hyperbolic_discounting

5 <https://www.foreignaffairs.com/articles/united-states/2019-12-10/clash-capitalisms>

HOW WE GOT HERE

By the summer of 1971, the international financial architecture established after World War Two was in disarray.

On Sunday 15th August, President Richard Nixon gave a broadcast address announcing that the US would no longer convert dollars into gold at a fixed price of \$35 an ounce, as it had done for quarter of a century. Just like that, the system of fixed exchange rates – with dollars convertible into gold at a fixed rate and other currencies pegged to the dollar – that had been agreed at the Bretton Woods conference in 1944 was dismantled.

Over the decades that followed, other aspects of the Bretton Woods system, such as government controls on cross-border capital flows, were similarly swept away. Money began to move more freely and, thanks to technological advances, faster. The financial industry began to grow like Topsy and to innovate like crazy.

Index Funds. Algorithmic trading. Share buybacks. Leveraged buyouts. Junk bonds. High-frequency trading. Credit derivatives. All these financial sector innovations have one thing in common: they are about making capital allocation more efficient (in the sense of generating higher financial returns more quickly). But, in the process, they have also made capital more impatient and myopic. Indeed, impatience and efficiency are two sides of the same coin: if investors weren't impatient, markets wouldn't be efficient.

The financial industry has a major – arguably worsening – blind spot when it comes to risks that build up over decades rather than quarters. Risks like those that led to the 2007-8 Financial Crisis. And risks like climate change, biodiversity loss and social fragmentation – all of which pose severe threats to financial stability over the long term.

This blind spot is baked into some of the basic tools, concepts and models that underpin decision making in finance (and business more broadly). Three key examples of this are Modern Portfolio Theory, Discounted Cash Flow analysis and Shareholder Value Maximisation.



Modern Portfolio Theory (MPT): first introduced 70 years ago, MPT provided the intellectual foundations for the index investing revolution. It is the basis for how trillions of dollars are managed in today's world. The basic idea behind MPT is that investors can deliver optimal returns for a given level of risk by building diversified portfolios. The theory assumes that investors cannot affect the risk-return profile of the market as a whole and, therefore, diversification is the best – and only – way to manage risks.

This was probably a fair assumption back in 1952 when the economist Harry Markowitz first came up with MPT: at the time, the vast majority of shares were owned by individual retail investors, who definitely didn't wield enough influence to affect the performance of the whole market. But today, most shares are owned not by individuals, but by massive institutions like pension funds and sovereign wealth funds that effectively "own the market".

These institutions are highly exposed to systemic risk, which cannot be diversified away. Their returns are determined primarily by the performance of the market as a whole and only marginally influenced by their ability to outperform the market. And unlike the individuals who dominated financial markets in Markowitz's day, today's large institutional investors do have the clout to affect the market's risk-return profile. But their adherence to MPT holds them back. As one recent report puts it, 'they have adopted an investing model that rejects the very idea of common sustainability guardrails, which are needed to manage overall market performance, the dominant determinant of an institution's return on stocks.'⁶

Discounted Cash Flow (DCF) analysis: an even more fundamental tool than MPT, DCF analysis determines how trillions of dollars are allocated in today's financial markets. In simple terms, DCF is a model for calculating the value of an investment based on its expected future cash flows. As the name suggests, those future cash flows are discounted, meaning that future profits (and losses) are given less weight in decisions about how to allocate money than current ones. The further into the future you project, the more heavily discounted those profits become. In other words, DCF analysis forces investors to be short-sighted.

Steve Waygood, Chief Responsible Investment Officer at Aviva Investors describes DCF as 'a super wicked problem with profoundly negative real-world consequences':

*'DCF ignores social capital as it is external to the corporate profit and loss statement. DCF ignores future generations with its discount rates. And it assumes away the need to preserve natural capital by assuming all investments can grow infinitely... We are left with millions of professional investors managing trillions of assets on our behalf, all of which largely ignore the one planet boundary condition.'*⁷

Governments, too, use discount rates to evaluate the costs and benefits of investment decisions. Roman Krznaric, author of *The Good Ancestor: How To Think Long Term In A Short-Term World*, likens this to the way the US Constitution of 1787 treated African-American slaves. For the purposes of calculating how many congressmen each state would get, slaves were assigned three-fifths of the value of a free white person. As a result of the way discount rates are used in economic analysis, governments today similarly assign less value to the lives of future citizens than they do to today's citizens. Discounting, Krznaric concludes, 'is a weapon of intergenerational oppression disguised as a rational economic methodology.'⁸

6 <https://pardot.bcorporation.net/l/39792/2020-09-24/9kx4pb>

7 <https://medium.com/volans/capitalism-with-green-swan-characteristics-5e774d2f7ff4>

8 Roman Krznaric, *The Good Ancestor: How To Think Long Term In A Short-Term World* (2020), pp. 73-5

Shareholder Value Maximisation (SVM): the norm that SVM should be the guiding principle of corporate management began to emerge in the 1970s and went mainstream in the 1980s. Milton Friedman famously argued in a 1970 *New York Times* OpEd that ‘the social responsibility of business is to increase its profits.’⁹

Shortly after Friedman’s OpEd was published, two business school professors at the University of Rochester, Michael Jensen and William Meckling, were commissioned to write a paper elaborating on how his ideas should be applied by business leaders. Their paper, which was published in the *Journal of Financial Economics* in 1976,¹⁰ quickly became a mainstay of business school reading lists.

Whereas Friedman had left open the possibility that companies should do things that may not produce immediate returns if they were likely to pay off in the long run,¹¹ Jensen and Meckling were more insistent that SVM meant SVM *now*. The only meaningful measure of a company’s value, they argued, was its stock price today. Anything that the market hadn’t already priced into the value of a company’s stock wasn’t worth knowing about. SVM explicitly made corporate decision making subservient to a financial industry whose field of vision was truncated by DCF and MPT.

Today’s business leaders and financiers have been trained to use these tools and concepts and, generally, not to question them. Since the turn of the millennium, business school curricula have started to broaden: SVM is no longer treated as gospel truth. But there is an inevitable time lag between changes in how MBA students are taught and how the global C-Suite thinks.

FIDUCIARY DUTY

Business schools are not the sole culprits in the story of how short-termism became endemic in today’s financial markets and corporate boardrooms. Market behaviours are also influenced by laws that define the duties and responsibilities of market participants. In particular, since most professional investors are managing other people’s money they have a duty of care towards the people whose money they manage. They are required by law to act in the best interests of their clients. This is commonly referred to as a fiduciary duty – and the way that fiduciary duties are defined has become a key battleground in the struggle to transform capitalism.

Around the same time that MPT was taking over the financial world, and SVM was starting to become the norm within companies, the US government passed a law that, in effect, required pension fund managers to be exclusively driven by maximising cash value now, with no regard for potential long-term consequences.¹² Today, the definition and interpretation of fiduciary duty has become more nuanced. In particular, it has expanded to incorporate financially material ESG factors.¹³ But the time dimension has been largely ignored, meaning that even the growing army of ESG investors default to a short time horizon that leads them to ignore systemic risks like climate change that play out over longer time frames.

9 <https://www.nytimes.com/1970/09/13/archives/a-friedman-doctrine-the-social-responsibility-of-business-is-to.html>

10 https://papers.ssrn.com/sol3/papers.cfm?abstract_id=94043

11 For example, Friedman wrote in his 1970 OpEd that ‘it may well be in the long-run interest of a corporation that is a major employer in a small community to devote resources to providing amenities to that community or to improving its government.’

12 This narrow definition of fiduciary duty was included in the Employee Retirement Income Security Act of 1974. See Kurt Andersen, *Evil Geniuses: The Unmaking of America* (2020), p. 157.

13 <https://www.fiduciaryduty21.org/>

MISALIGNED INCENTIVES

Fiduciary duties exist because today's financial system is highly intermediated. Between the end beneficiaries of a pension fund, for example, and the management teams of the companies their pensions are invested in, there are a lot of people involved, most of whom are incentivised to focus on the short term. As Dominic Barton explained in *Harvard Business Review* in 2011:

*'Fund trustees, often advised by investment consultants, assess their money managers' performance relative to benchmark indices and offer only short-term contracts. Those managers' compensation is linked to the amount of assets they manage, which typically rises when short-term performance is strong. Not surprisingly, then, money managers focus on such performance – and pass this emphasis along to the companies in which they invest.'*¹⁴

This means that there is often a fundamental misalignment between the time horizons of end beneficiaries (people typically start paying into a pension decades before they will retire) and the incentives that drive money managers. End beneficiaries may want to optimise returns over a period of decades; money managers want to optimise returns this year. They have no incentive to worry about risks that may materialise decades from now.

FINANCIAL REGULATION

Regulators, you might think, must take a longer view, given they are responsible for preserving financial stability. They do – but only up to a point. As the then Bank of England Governor Mark Carney pointed out in 2015, short time horizons are also the norm in the world of financial regulation:

*'The horizon for monetary policy extends out to 2-3 years. For financial stability it is a bit longer, but typically only to the outer boundaries of the credit cycle – about a decade... Even credit ratings typically only look out to 3-5 years.'*¹⁵

In short, regulators, too, are guilty of disregarding threats that build up over decades.

HEADING TOWARDS CRISIS

The story of capitalism over the last 50 years has been dominated by the growth of finance and the increasing myopia of financiers. Short-termism is taught in business schools, written into laws and regulations, embedded in the tools and models used to allocate capital, and hardwired into incentives at every level of the financial system. This combination of factors has left us singularly ill-equipped to address the systemic challenges that threaten our individual and collective prosperity over the next 50 years.

The asymmetrical distribution of risks and rewards between the present and the future that is built into our current political, economic and financial order is a root cause of the unsustainability that now threatens all we hold dear. Profits from polluting activities accrue in the present; costs are imposed on the future. Markets (and governments) systematically discount the latter, while putting a premium on the former.

Fortunately, we are in the midst of a paradigm shift – for economics, finance, business and politics – triggered by the growing recognition that, in each of these domains, old assumptions about how to maximise wealth and welfare are no longer fit for purpose. It's to this paradigm shift that we turn next.

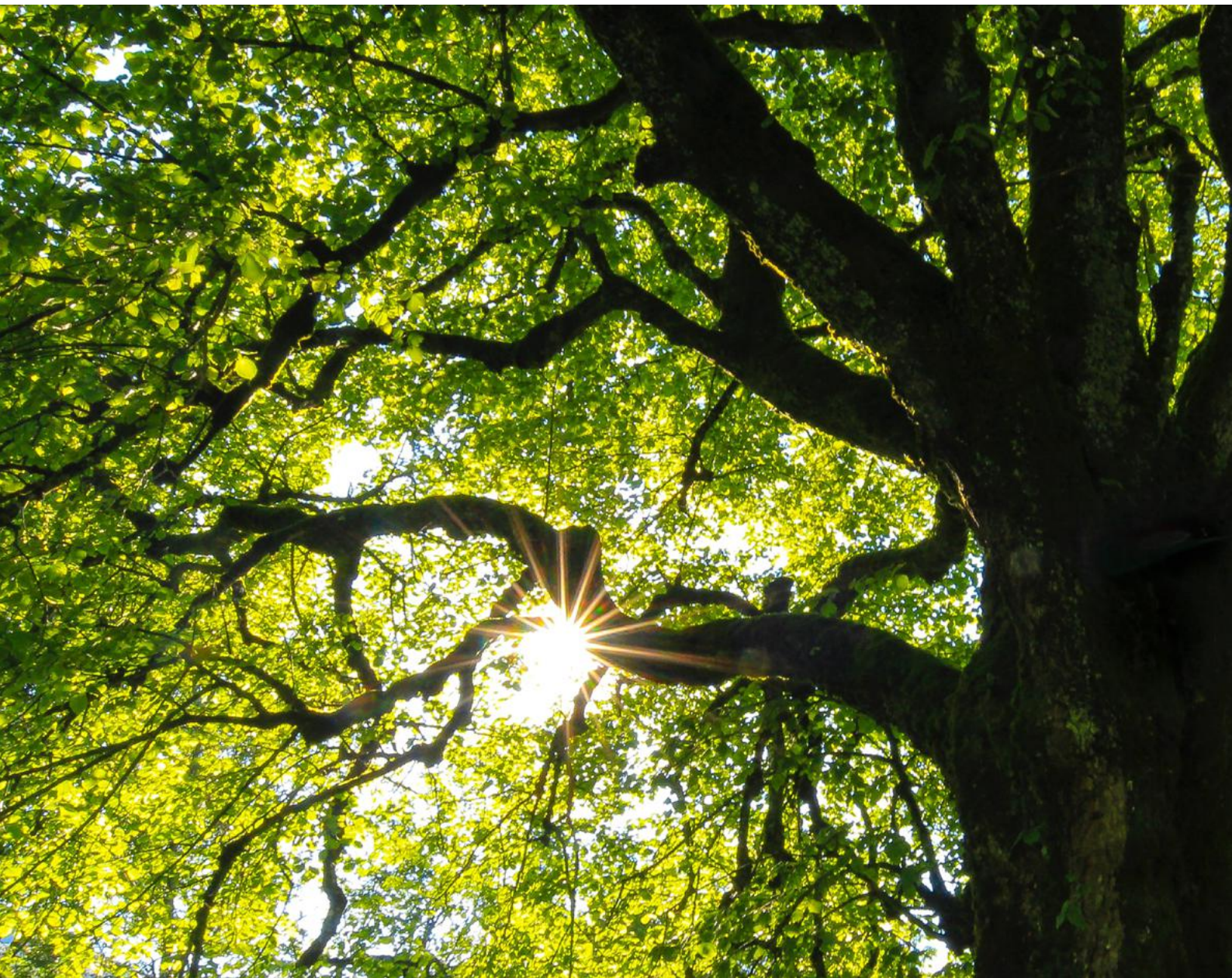
¹⁴ <https://hbr.org/2011/03/capitalism-for-the-long-term>

¹⁵ <https://www.bankofengland.co.uk/-/media/boe/files/speech/2015/breaking-the-tragedy-of-the-horizon-climate-change-and-financial-stability.pdf?la=en&hash=7C67E785651862457D99511147C7424FF5EA0C1A>

PARADIGM SHIFT

Right around the time President Nixon was pulling the plug on the Bretton Woods monetary order, researchers at MIT were putting the finishing touches to a groundbreaking study of the long-term consequences of exponential growth for the earth system.

First published in 1972, *The Limits to Growth* presented conclusions from the first truly comprehensive attempt to model the implications of biophysical limits for the global economy. Its message was stark: *'the basic behaviour mode of the world system is exponential growth of population and capital, followed by collapse.'*¹⁶



¹⁶ The Limits to Growth (1972), p. 142

Awareness of environmental constraints had begun to take off in the 1960s, but *Limits to Growth* signalled the emergence of a new paradigm in political and economic thinking, based on the realisation that what we would now call planetary boundaries¹⁷ were going to become a critical factor in every aspect of our lives. Our economy, it turned out, was only a sub-system of our ecology. In the words of the Dasgupta Review – commissioned by the UK Government and published almost half a century after *Limits to Growth* – ‘because the biosphere is bounded, the global economy is bounded.’¹⁸

It’s a realisation we have struggled to come to terms with, but that’s to be expected. **Paradigm shifts are profoundly unsettling, more often than not resisted by those who came of age under an older paradigm. As a result, they can take decades to crank through – essentially proceeding at the speed of generational handover**, as those whose worldview was formed by a different set of realities are replaced by those who are natives of the new paradigm. Today’s youth climate strikers are natives of the planetary boundaries paradigm.

New paradigms typically only become dominant when the old paradigm is in deep crisis, which is where we find ourselves today. Stocks of natural and social capital have been depleted to the point where, in more and more instances, we can no longer rely on the ‘ecosystem services’ and social stability that underpin long-term wealth and prosperity.

Economists have long recognised the existence of “externalities” (the term was coined in 1920¹⁹). But until relatively recently it was possible to assume that those externalities were sufficiently small that, while markets may not be as ‘complete’ as economic theory wished them to be, they were complete enough for natural and social capital to be left out of most economic analysis.

The true scale of those “externalities” is now dawning on us. By one estimate, the value of the Earth’s annual ecosystem services was depleted by \$20 trillion between 1997 and 2011²⁰ – equivalent to more than two-thirds of global GDP growth over the same period. Another recent study covering 140 countries found that, between 1992 and 2014, the value of the stock of natural capital per head had declined by nearly 40%.²¹

And so, **a tipping point is now approaching for the planetary boundaries paradigm. From Doughnut Economics²² to Regenerative Economics,²³ intellectual models that integrate the reality of biophysical limits are gaining traction.**²⁴ Fundamental to the prescriptions these new models offer for creating, enhancing and preserving wealth and wellbeing is the need for greater long-termism in political, economic and financial decision-making.

The reorientation of our financial and political systems to embrace a *much* longer-term perspective than has been the norm over the last 50 years is both urgent and – at least to those who are natives of the planetary boundaries paradigm – a no-brainer. The vital question is what that means practically, and how we do it.

17 <https://www.stockholmresilience.org/research/planetary-boundaries.html>

18 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957291/Dasgupta_Review_-_Full_Report.pdf

19 See Arthur Pigou, *The Economics of Welfare*, 1920.

20 <https://www.sciencedirect.com/science/article/abs/pii/S0959378014000685>

21 <https://www.taylorfrancis.com/books/inclusive-wealth-report-2018-shunsuke-managi-pushpam-kumar/e/10.4324/9781351002080>

22 <https://doughnuteconomics.org/>

23 https://www.youtube.com/watch?v=joC1XD2L_QY

24 As one example of this, the city of Amsterdam embraced Doughnut Economics in April 2020 to guide social and economic policymaking as the city recovers from the COVID-19 pandemic. See <https://doughnuteconomics.org/amsterdam-portrait.pdf>

THE EMERGENT FUTURE

As we have seen, the short-termism of our current political, economic and financial systems does not have a single source. It emerged – and got stronger – over decades as a result of the interactions between particular ideas, technologies, laws, regulations, cultural norms and more.

The same will be true for the long-termism we now need to instill in those systems if we are to future-proof both individual and collective wealth and wellbeing. **There are no silver bullets: only a strategy of intervening across multiple domains concurrently is likely to succeed in meaningfully stretching our time horizons.**

Some of those interventions will be about transforming the “core” of our current systems – rewriting rules, revising norms and redesigning institutions to shift default behaviours. Others will be about experimentation at the “edge” to develop viable alternatives to how finance, business and politics are practiced today. Both are necessary.

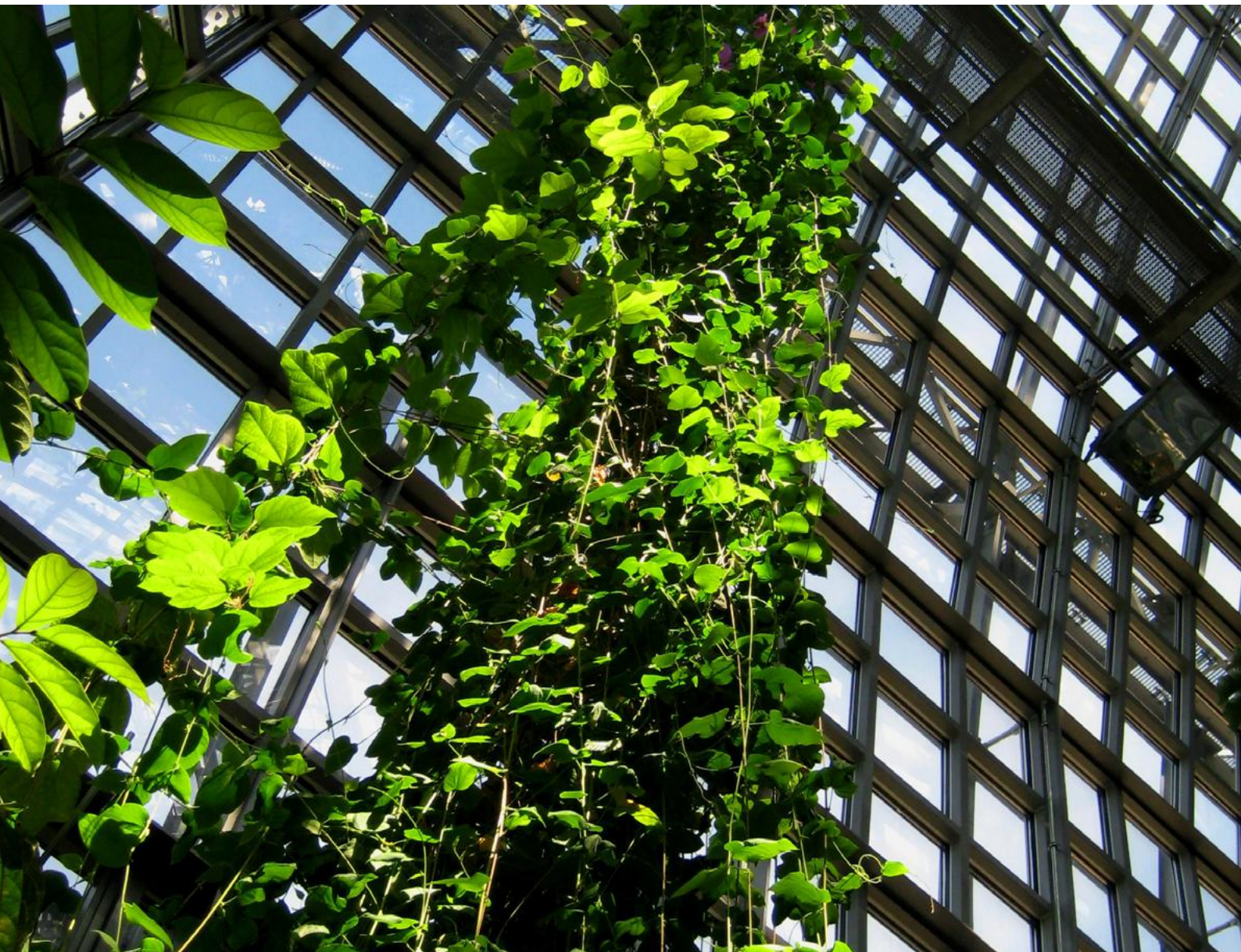


Table 1: examples of core and edge innovation focused on long-termism

Transforming the core	Experimenting at the edge
End quarterly earnings guidance at publicly listed companies ²⁵	Create new financial instruments (eg., perpetual bonds) ³⁰ and investment vehicles with a mandate to focus on long-term assets and outcomes (eg., natural capital ³¹ or the net zero transition)
Ensure CEOs have “skin in the game” beyond their tenure by paying them (partly) in shares that they cannot sell until a set number of years has passed	Develop new pieces of financial system infrastructure that have long-termism as a design feature (eg., the Long-Term Stock Exchange ³²)
Give long-term-committed shareholders greater voting rights than short-term shareholders ²⁶	Create long-term digital identities (eg., IOTA's persistent selv ³³)
Use the tax system to “nudge” investors to hold onto shares for longer periods, rather than engage in speculative trading (eg., through a financial transactions tax ²⁷)	Invest in futures literacy in governments, civil society, and companies; and add it to school curricula at all levels ³⁴
Enact changes to limited liability laws to make shareholders and company directors at least partially liable for longer-term environmental damage ²⁸	Apply science fiction to real world challenges (eg., TASAT ³⁵)
Amend the fiduciary duties of investors and the legal mandates of financial regulators to integrate sustainability issues that affect both financial and non-financial outcomes in the long run ²⁹	Experiment with new forms of governance and decision making designed to integrate a long-term perspective (eg., Youth Boards, Future Design ³⁶)
	Develop new investment metrics and risk management frameworks designed to bring long-term risks into focus (eg., 1in1000 ³⁷)

This list is indicative rather than exhaustive. Many of the examples in the left-hand column are drawn from ‘Reinventing Capitalism: A Transformation Agenda’, a report published in November 2020 by Volans and the World Business Council for Sustainable Development.³⁸ Many of the examples in the right-hand column are drawn from the portfolio of ideas and experiments being developed by EIT Climate-KIC and its partners in the Long-Termism Deep Demonstration.³⁹

25 <https://hbr.org/2011/03/capitalism-for-the-long-term>

26 <https://hbr.org/2019/01/the-high-price-of-efficiency>

27 <https://www.brookings.edu/policy2020/votervital/what-is-a-financial-transaction-tax-2/>

28 <https://www.socialeurope.eu/limited-liability-is-causing-unlimited-harm>

29 <https://www.unpri.org/policy/a-legal-framework-for-impact>

30 <https://provocations.darkmatterlabs.org/an-alliance-for-long-investing-eb7d218ed40a>

31 See, for example, <https://www.institutionalassetmanager.co.uk/2021/01/12/294362/natural-capital-centre-new-usd10-billion-investment-alliance>

32 <https://ltse.com/>

33 <https://blog.iota.org/persistent-selv-an-interactive-demo-around-long-term-digital-identity/>

34 <https://en.unesco.org/futuresliteracy>

35 <http://tasat.ucsd.edu/>

36 <https://voxeu.org/content/future-design-new-policy-making-system-future-generations>

37 <https://www.1in1000.com/>

38 https://volans.com/wp-content/uploads/2020/11/WBCSD_Reinventing_Capitalism_Vision_2050_Issue_Brief.pdf

39 <https://www.climate-kic.org/programmes/deep-demonstrations/long-termism/publications/>

Because we've been running down stocks of natural and social capital for decades, resilience and regeneration are the essential ingredients of any strategy to preserve and enhance wealth and prosperity over the long term. They are both outcomes that any truly long-term-oriented investor should focus on.

Resilience is a necessary priority because the cumulative damage already done to natural and social systems means we are guaranteed a bumpy ride for decades to come. Even in a best-case scenario where global warming is limited to 1.5°C above pre-industrial levels, we will have to cope with rising sea levels and an increase in both the frequency and severity of extreme weather events. To avoid these facts of 21st century life crippling economies, destroying wealth and causing untold suffering, investments in resilience and adaptation are essential (see table 2).

Ultimately, though, resilience and adaptation will not be enough on their own. To avoid a world of permanently escalating threats to wealth and welfare, we need to replenish our stocks of natural and social capital. That means investing in practices that are regenerative – both socially and environmentally. At its most basic level, regeneration involves working with, rather than against, nature – harnessing the extraordinary power of natural ecosystems to heal themselves, and replenish what has been depleted, if given the chance to do so.

Many investments in resilience and regeneration will deliver a positive financial return, but most will not be justifiable within a paradigm whose goal is to maximise financial returns over the shortest possible timescale.

This means that philanthropy has a critical role to play, as do impact investing strategies that put a value on the externalities otherwise excluded from profit & loss statements. Stewardship, too – at both the micro and macro levels – has a part to play in encouraging companies and policymakers to target resilience and regeneration, rather than efficiency and extraction.

Table 2: examples of investments in resilience and regeneration

Resilience	Regeneration
Pursue a portfolio of strategies for drought-proofing food production – eg., developing strains of staple crops that are more resilient to drought; using satellite data to better monitor and manage water loss; and developing lab-grown alternatives	Shift agricultural production to regenerative practices that enhance soil health, thereby sequestering carbon, ⁴⁰ increasing water retention and improving the nutritional value of food
Develop urban infrastructures better able to withstand extremes of weather (eg., “sponge cities” to prevent flooding)	Create and maintain marine protected areas to allow below-water biodiversity to recover, to increase stocks of “blue carbon”, ⁴¹ and to protect coastal cities from flooding
Make operational and supply chain resilience a priority topic for company engagement by investment managers	Promote rewilding of degraded land and the creation of wildlife corridors
Invest in preparedness for “predictable surprises”, such as pandemics, heatwaves and cyber attacks	Invest in urban (re-)development projects that make cities more liveable, socially inclusive and culturally vibrant

40 If regenerative agricultural practices were phased in and implemented on one-fourth of the world's farms and grasslands, they would absorb and retain 55 billion tons of greenhouse gases in the next thirty years. [Source: Paul Hawken, *Regeneration*, p. 97]

41 Blue carbon is the carbon stored in coastal and marine ecosystems.

CONCLUSION

“You can short civilization if you want. Not a bad bet really. But no one to pay you if you win. Whereas if you go long on civilization, and civilization (therefore) survives, you win big. So the smart move is to go long.”

Kim Stanley Robinson, *The Ministry for the Future* (2020)

Will we do the smart thing? The answer is not coded into our DNA. We are not predestined to act short-sightedly. Humans are more than capable of dreaming, planning and caring about the distant future. But it will take courage, creativity and collaboration to overthrow one paradigm – a paradigm based on maximising economic efficiency – and replace it with another based on respecting planetary boundaries.

To avert catastrophe and collapse, we will have to do things that are impossible to justify using the theories and models of the old order. Businesses will have to make decisions that are unjustifiable under Shareholder Value Maximisation. Investors will have to allocate capital in ways that look crazy when viewed through the lens of Modern Portfolio Theory and Discounted Cash Flow analysis. Regulators will have to stretch their timeframes well beyond a single business cycle.

By and large, the alternative theories and models we need exist or are, at the very least, emergent. But, as John Maynard Keynes once wrote, ‘the difficulty lies not so much in developing new ideas as in escaping from old ones.’⁴² We must be willing to look a bit crazy, to sacrifice some efficiency for greater resilience, some growth for greater balance, to let go of old assumptions that no longer serve us well.

We know that our political, economic and financial systems can be rewired because it’s happened before.

It happened following the collapse of the Bretton Woods order 50 years ago and, one way or another, it will happen again. Collectively, we can do the smart thing. We can coordinate to transform the core of contemporary capitalism while simultaneously experimenting around its edges. We can invest in building a more resilient and regenerative economy. And we can do it all in time – if we act with urgency to rediscover the value of patience.

42 John Maynard Keynes, *The General Theory of Employment, Interest and Money* (1936).

Founded in 2008, Volans is a think tank and advisory firm operating globally to help business leaders make sense of the emerging future and address global challenges. We work with a select group of clients to unlock the potential of their organisation, create opportunities for market evolution, and design solutions ready to scale.

We are professional and objective, but we are not a neutral advisor. We challenge and question, leaning into – and helping our clients lean into – the future we see through our research work and inquiries. Our work always centres around strategic conversations to catalyse action. The process is bespoke to each engagement. Our client relationships are collaborative, and we choose to work with leadership teams with whom there is a mutual chemistry and a shared ambition.

Volans became the first British company to certify as a B Corporation in 2013 and ranks top 20 in the 2021 FT Management Consultant Ratings for sustainability.

EIT Climate-KIC is the EU's climate innovation initiative, working to accelerate the transition to a zero-carbon and resilient world by enabling systems transformation. Headquartered in Amsterdam, it operates from 13 hubs across Europe and is active in 39 countries. EIT Climate-KIC was established in 2010 and is predominately funded by the European Institute of Innovation and Technology (EIT), a body of the European Union.

As a Knowledge and Innovation Community (KIC), it brings together more than 400 partners from business, academia, the public and non-profit sectors to create networks of expertise, through which innovative products, services and systems are developed, brought to market and scaled-up for impact.

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