real-world economics review, issue no. 90
subscribe for free

Greenwish: the wishful thinking undermining the ambition of sustainable business

Duncan Austin[*,1] [UK unaffiliated]

Bad news for the environment: sustainable business isn't succeeding.
I'm frustrated, too. But we can make it succeed.

Introduction

The two-decade-old sustainable business movement has reached a major crossroads that few of its participants yet recognize. While the movement can claim many successes, it is becoming clear that there are limits to the contribution sustainable business can make to delivering a sustainable human culture. Yet, unless its practitioners quickly acknowledge such limits, the movement risks diverting effort and resources away from the types of change that might really make a difference – and are now urgently required.

From the outset, the sustainable business movement has confronted instances of so-called greenwash, in which companies promote token but well-publicized sustainability initiatives to divert attention from environmentally damaging core businesses they have no intention of changing. Such efforts are relatively easy to expose because of their small scale and underlying cynicism.

Twenty years on, we may now be facing a new affliction of greenwish – the earnest hope that well-intended efforts to make the world more sustainable are much closer to achieving the necessary change than they really are. This unsought condition may prove every bit as harmful as greenwash, and possibly harder to unpick, because it is more widespread and arises mainly from good intentions.

The rise of market environmentalism

I reach this conclusion reluctantly. For nearly 25 years, I have been an enthusiastic advocate of the sustainable business movement, first at an environmental non-profit organization and then at a sustainable investment firm. As environmental policy initiatives faltered in the 1990s – in the face of newly coordinated corporate opposition to regulations and the headline disappointment of the 1997 Kyoto meeting – I, like many others, sought to leverage market forces to promote sustainability.

The talk at the time was of win-win opportunities – new business products or processes that might be good for both planet and profit – a notion substantiated by both early developments

[*] Duncan Austin has had a 25-year career in the sustainability field, having held senior positions at both an environmental non-profit organization and a sustainable investment firm. He currently writes as an independent.

[1] I am grateful to Raj Thamotheram of Preventable Surprises and John Fullerton of Capital Institute for distributing an earlier version of this essay.

and many subsequent innovations. The collective focus on such opportunities also defused the growing business-versus-environment antagonism of the period.

Like others, I benefitted personally from this transition; pursuing one's environmental interests in the private sector offered decidedly better compensation than in the non-profit sector. Consequently, my new disquiet regarding the sustainable business movement may appear both ungrateful – because it has provided me a rewarding career – and oddly timed – because, by many metrics, its two principal pillars appear to be in good health:

- A Socially Responsible Investing (SRI) movement has seen the finance industry infuse sustainability considerations into its investment decision-making.[2] From an almost non-existent base in the 1990s, it is estimated that a quarter of global financial assets are now managed sustainably in some form or other, rising to as much as half in Europe and Australasia.[3]

- A broader Corporate Social Responsibility (CSR) movement has encouraged a focus on sustainability in the private sector, beyond just the finance industry, and has also seen healthy uptake. As one crude measure, while only eleven companies produced sustainability reports in 1999, today 90 percent of the world's largest firms publish such reports.[4]

As these two movements emerged in the late 1990s (and as policy efforts withered), society effectively embraced a notion of market environmentalism, which has become the dominant paradigm – and seemingly our best hope – for achieving a more sustainable culture.

In many respects, market environmentalism has achieved considerable successes. The combined efforts of early sustainability champions inside corporations, encouraged by sustainable investors on the outside, successfully directed many companies towards previously unseen areas of innovation. The sustainable business movement can credibly claim to have catalysed many new products and processes, from greener household products to renewable energy technologies to more organic foods to a host of unsung industrial efficiencies.

Early successes triggered a virtuous circle of momentum, encouraging more firms to adopt CSR principles, enticing more investors to consider sustainability factors and ensuring ever more sustainable solutions in the marketplace. Innovation has combined with innovation, leading to dramatic and environmentally beneficial cost declines in many new technologies, from solar panels to batteries to lighting.

---

[2] The terminology has evolved considerably to now include "sustainable investing", "ESG (environmental, social and governance) investing" and, most recently, "impact investing". Here, I stick with the original formulations of SRI and CSR as umbrella terms for these slightly different approaches.
[3] Global Sustainable Investment Alliance, *Global Sustainable Investment Review 2016*, March 2017 http://www.gsi-alliance.org/wp-content/uploads/2017/03/GSIR_Review2016.F.pdf [accessed 19 November 2019].
[4] Eleven companies in 1999: from http://database.globalreporting.org/search. In fact, two reports from different Procter and Gamble entities, for a total of 12 reports. Second figure from page 17 of Global Reporting Initiative, *GRI Annual Report 2016-2017*, 2017 https://www.globalreporting.org/resourcelibrary/GRI%20Annual%20Report%202016-2017.pdf [accessed 20 November 2019].

Less tangibly, the SRI and CSR movements have fostered a sea change in attitudes across much of the private sector. Auto companies went from their 1990s default of lobbying against fuel efficiency standards to competing vigorously on electric vehicles. Similarly, chief sustainability officers – a designation virtually unknown before 2004 – have become ubiquitous in the corporate world.[5]

Importantly, this has not been mere pro bono work, but has delivered profits for companies and excess returns for sustainable investment funds. Affirming the early potential of win-win opportunities, there is increasing consensus for at least the weak hypothesis that investing sustainably won't harm returns, and many instances of sustainable funds having outperformed.[6]

All, it seems, is well.

The state of today's environment

Yet, 20 years after this major transition to market environmentalism, it is becoming evident that human culture cannot depend on this paradigm to secure a sustainable future.

Global CO_2 emissions are now 51 percent higher than in 1997, the year of the Kyoto meeting.[7] Brief optimism over slower emissions growth between 2014 and 2016 has been dashed by renewed faster growth in the last two years. In March, the World Meteorological Organization noted that the physical signs and socioeconomic impacts of climate change are accelerating.[8]

The predominant threat of climate change can often obscure the bleak state of other environmental indicators. Global plastic production has more than doubled since 1997, with still more than half of plastic waste being discarded into the environment.[9] Moreover, there is growing recognition that it is near-invisible and highly elusive microplastics – effectively "plastic particulate matter" – that pose the greatest risk to the natural environment and its food chains.

Our global ecosystem bears deepening scars of human activity. In May 2019, following the most comprehensive appraisal of biodiversity ever conducted, the United Nations reported that ecosystem health is declining at rates unprecedented in human history, and – here as

[5] http://weinrebgroup.com/wp-content/uploads/2011/09/CSO-Back-Story-by-Weinreb-Group.pdf
[6] Ann-Kathrin Blankenberg and Jonas F. A. Gottschalk, "Is Socially Responsible Investing (SRI) in Stocks a Competitive Capital Investment? A Comparative Analysis Based on the Performance of Sustainable Stocks", *SSRN Electronic Journal*, 2018 https://doi.org/10.2139/ssrn.3186094. "There is already a vast range of literature about the competitiveness of SRI and most studies indicate that SRI seem to perform predominantly equal, sometimes even better or at least not worse than their conventional counterparts."
[7] Corinne Le Quéré and others, "Global Carbon Budget 2018", *Earth System Science Data*, 10.4 (2018), 2141–94 https://doi.org/10.5194/essd-10-2141-2018 .
[8] World Meteorological Organization, "State of the Climate in 2018 Shows Accelerating Climate Change Impacts", *World Meteorological Organization*, 2019 https://public.wmo.int/en/media/press-release/state-of-climate-2018-shows-accelerating-climate-change-impacts [accessed 20 November 2019].
[9] Roland Geyer, Jenna R. Jambeck, and Kara Lavender Law, "Production, Use, and Fate of All Plastics Ever Made", *Science Advances*, 3.7 (2017), e1700782 https://doi.org/10.1126/sciadv.1700782. Table S1; https://ourworldindata.org/faq-on-plastics.

well – that the rate of species extinctions is accelerating.[10] Even as we customize our coffees and cars, we are homogenizing the planet.

Investor Jeremy Grantham argues we may need to worry as much about soil erosion as climate change. Iowa, the leading US corn-growing state, has seen topsoil shrink from 14 inches in 1850 to less than five inches today.[11] Crop growth requires four inches of topsoil, "three will get you by". These shrinking margins are not easily restructured.

While global environmental indicators would surely be worse still without the CSR and SRI initiatives of the last 20 years, the fact that matters in 2019 is that these indicators are not much, much better. What has been termed the "Great Acceleration" of humanity's environmental footprint shows no signs of slowing.[12]

So, 20 years after we recruited market forces as the principal means to secure a sustainable future, we confront a new reality: sustainable business is necessary for a sustainable culture but far from sufficient. It is not that there are not win-win opportunities nor good investment returns to be had from identifying them, only that the global metrics reveal today's economic growth remains an overwhelmingly win-lose phenomenon, but one now granted inadvertent cover by the current form of sustainable business.

Moreover, though the focus of this essay is our ecological challenge, there is a parallel story of a fraying social fabric. To the Great Acceleration (dating from the 1950s) has been added a "Great Concentration" of wealth and market power (dating from the 1980s). In virtually all major economies, the top 10 percent, and especially the top 1 percent, of income earners have seen dramatic gains in their share of income.[13]

Taken together, there has been a troubling deterioration of many of the environmental and social metrics the sustainable business movement has explicitly sought to improve.

Three problems

I believe we have reached this point for three reasons:

The single greatest problem, which becomes clearer every day, is that the sustainable business movement has underappreciated the intractable influence of the half-baked profit measures that drive our market system. To use the vernacular, SRI has been trumped by SVM (shareholder value maximization).

---

[10] United Nations, "UN Report: Nature's Dangerous Decline "Unprecedented"; Species Extinction Rates "Accelerating"", *United Nations Sustainable Development*, 2019 https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report [accessed 20 November 2019].

[11] Jeremy Grantham, *The Race of Our Lives Revisited* (GMO, August 2018), p. 35 https://www.gmo.com/europe/research-library/the-race-of-our-lives-revisited/ [accessed 19 November 2019].

[12] Will Steffen, Paul J. Crutzen, and John R. McNeill, "The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature", *AMBIO: A Journal of the Human Environment*, 36.8 (2007), 614–21 https://doi.org/10.1579/0044-7447(2007)36[614:TAAHNO]2.0.CO;2.; William J. Ripple and others, "World Scientists' Warning to Humanity: A Second Notice", *BioScience*, 67.12 (2017), pp. 1026–28 https://doi.org/10.1093/biosci/bix125.

[13] World Inequality Lab, *World Inequality Report 2018* https://wir2018.wid.world/files/download/wir2018-full-report-english.pdf [accessed 19 November 2019].

Driven by commercial norms to sell solutions – and, frankly, out of the wish that it could be so – the sustainable business movement has inadvertently lent its voice to the unhelpful idea that achieving a sustainable culture will be a costless undertaking. Unfortunately, Earth charges rent, and it is not in our long-term interest to pretend otherwise.

In failing to take a systemic view of our ecological problem, the sustainable business movement has not yet identified that its greatest opportunity – becoming a responsibility – is not to persist with longstanding strategies that exhibit diminishing returns to effort, but instead to grasp the nettle of political involvement in order to secure the policy changes that are now urgently needed – and that provide the only means for business activity to become truly sustainable.

I elaborate on these three points in turn.

1. The half measure of modern profit

In the blink of an evolutionary eye, we have become a profit-coordinated species. We are still catching up to this fact.

Though markets and trading have a very long history, the rise of the market as the pre-eminent mechanism for social coordination arose only from the momentous cultural upheaval of 18th-century Western Europe.[14] First slowly, and then quickly, market forces have since spread both deeper into society and further across the globe, with an important acceleration in the last 40 years, in which a neoliberal model was first developed in the US and UK and then propagated globally via a "Washington Consensus". This has seen market forces slowly but surely displace – "crowd out", no less – the influence of pre-market social institutions, such as government, community, religion and family.

Though there is a tendency to perceive growth as the key dynamic of the market system, it is the pursuit of profit that spurs and shapes growth. Sure, there is plenty of economic growth that proves profitless, but business models always leave the station expecting to be profitable. Hence, profit is the animating force of the market system.

Importantly, the idea of profit is not the problem at all. Trying to solve our environmental problems by dismantling the market mechanism is unlikely to achieve much, and history makes clear the huge advances profit has enabled. As economic historian Deirdre McCloskey has convincingly argued, it was Western Europe's cultural accommodation of the profit motive – more than any technological advance or mineral discovery – that proved the critical catalyst for what she dubs the "Great Enrichment" of the last two centuries, which has seen unprecedented and widespread improvement in living standards and provided the basis for enhanced individual freedoms.[15]

---

[14] There was no definitive opening bell for our modern "Market Era", though Adam Smith's *Wealth of Nations* (1776) is often invoked as a convenient starting date. However, Smith's work came more than 60 years after Bernard de Mandeville documented the early signs of a marketizing society in his *Fable of the Bees*, written as early as 1714. Hence, the dawn of our market culture is more of an early- rather than late-18th-century phenomenon.

[15] Deirdre N. McCloskey, *Bourgeois Dignity: Why Economics Can't Explain the Modern World* (University of Chicago Press, 2011).

The dropped stitch of 20th-century economics

So, the problem – and it is a growing problem – is not profit per se, but the incomplete nature of today's profit calculations. Three hundred years into the Market Era, our pricing system remains a work in progress, and the profit calculations it elicits consequently remain incomplete. Fundamentally, our sustainability predicament arises from the fact that we have increasingly organized society around a half-baked measure of profit, and then behaved as if it were the real thing.

I refer, of course, to the notion of negative externalities, or external costs – those actions and exchanges in the economy that create harm, but for which no market price is paid.[16] Arthur Pigou formally described this flaw in market systems as early as 1920, only for Economics to fatefully downplay its significance for most of the 20th century.[17] For a long time, this was a tolerable neglect as markets were more robustly counterbalanced by pre-market institutions that upheld unpriced values, and as the environment was able to absorb the fewer demands of a smaller, less consumptive population. Unfortunately, with every year that passes, market forces assume ever-greater cultural primacy, the environment comes under increasing stress and the conceptual gap that has always existed within the market system matters more and more. Consequently, the failure of Economics to fully incorporate externalities in its 20th-century theorizing now appears to be the dropped stitch that defines the whole discipline.[18]

Even this may understate the situation. The "externalities" terminology encourages a perception of unpriced damages as being mere residuals to the centrepiece of a priced economy. Yet, estimates of the monetary value of unmarketed ecosystem services are well in excess of global GDP.[19] Hence, far from externalities being peripheral, they may be the main event! In other words, more of the environmental and social exchanges that shape our wellbeing may be unpriced than priced, yet we increasingly steer by the priced exchanges only.

As its cultural influence grows, we must evaluate the market not only by what it makes possible (as we do routinely with measures of gross domestic product) but also by what it

[16] There are positive externalities, too, but these "free gifts" do not pose the systemic threat of negative externalities.
[17] A. C. Pigou, *The Economics of Welfare* (Palgrave Macmillan, 2013 (1920)).
[18] It is an unfortunate story. A landmark economics paper in the mid-20th century by Arrow-Debreu (1954) – recognized by Nobel Prizes, no less – found that, under certain unrealistic assumptions, "complete markets" offered a superior means to any political mechanism in allocating scarce resources. The prominence accorded to this theory amounted to a "sliding door" moment for Economics; most economists interpreted it as a green light to proceed *as if* markets were complete (i.e. that all things of value to human beings indeed had prices), rather than a caution to reflect on the inherent limits of what Economics might ever be able to say, given the implausible assumptions. The assumption of perfect competition alone invalidates the idea. It is easy to criticize now, but at the time, the social sciences in general – and Economics in particular – were in the grip of a reductionist mindset encouraged by the stunning earlier advances in Physics and Chemistry. Alas, these were sciences of dead things, not living things, so the erroneous application of reductionist approaches to living systems, which arguably reached its apogee in 20th-century Economics, is the fundamental driver of many of our contemporary social and ecological problems. Fortunately, the deep reworking of Economics – essentially to become more like Biology than Physics – is now underway but will take many years.
[19] Two major studies in 1997 and 2014 estimated the global value of ecosystem services at between 1.7 and 1.8 times contemporary global GDP. Such estimates obviously rest on many assumptions and these are central case figures. See: Robert Costanza, Ralph d'Arge, and others, "The Value of the World's Ecosystem Services and Natural Capital", *Nature*, 387.6630 (1997), p. 253 https://doi.org/10.1038/387253a0; and Robert Costanza, Rudolf de Groot, and others, "Changes in the Global Value of Ecosystem Services", *Global Environmental Change*, 26 (2014), pp. 152–58 https://doi.org/10.1016/j.gloenvcha.2014.04.002.

omits – the things we value of which the market has no grasp. It is because of its omissions that the market is the conceptual apparatus that causes both a Great Enrichment and the Great Acceleration in environmental damage. Neither market supporters nor market critics can claim just one without acknowledging the other.

Empty margins

Where this conceptual flaw changes today's world – where the rubber meets the road – is in decision-making based on corporate financial statements. The profit and loss (P&L), balance sheet and cashflow statements serve as the principal documents for discussion in meetings of investors and corporations – with investors duty-bound to back financial statements that promise the greatest returns and corporate executives incentivized to deliver financial statements of maximum appeal to investors.

To be clear, the numbers in these statements are important, and it is vital we defend their integrity with the legal and accounting rules developed for that purpose. The frequent instances of corporate fraud are a reminder that manipulating financial statements causes real harm.

And yet, there is a bigger – and perfectly legal – deception occurring. Even in the clean statements of a respectable company, the larger subterfuge is the unspoken convention and daily practice of interpreting financial figures as the full measure of a company's worth. Sure, financial statements tell us something about a company, just as a stranger's bank statement would tell you something about them. But not nearly as much as you would imagine. And not nearly enough about certain things that are really starting to matter.

For example, energy and manufacturing companies have no line items reflecting the damage caused by their greenhouse gas emissions. Agricultural companies have no bills recorded for soil erosion, nor chemical companies for mounting pesticide resistance and toxic runoffs into our lakes and rivers. The food industry shows no financial outflows for the obesity crisis prompted by the profit-fortifying combination of their sugar, salt and fat offerings of the past few decades. Certain social costs are also absent; the tech industry's accounts seem to be missing cost entries for the adverse mental health and privacy consequences of algorithmically optimizing their business models to promote users' screen time.

Yes, there is certainly a tax line intended as a contribution to society, but this is an indiscriminate catch-all – florists and mining companies face the same basic rate. Moreover, contemporary corporate attitudes to paying tax leave much to be desired – financial markets reward companies for defying, as much as possible, the spirit of tax legislation to which they are subject.

Ponder these issues for long enough and eventually one's eye is drawn from the profit margins within the income statement to the empty margins of the surrounding page. Those empty margins are a curiously eloquent expression of everything that is missing – the deforestation and species loss not paid for, the animal cruelty not fully compensated, the screen addiction not charged, the contribution to climate change not reimbursed, the plastic pollution not indemnified. They are all there in the empty margins if you look closely enough, but – be warned – once you start looking, empty margins might become all you see.
A major strategy of the sustainable business movement has been (metaphorically) to fill these empty margins with supplementary information about non-priced values and to persuade

business to give this information equal weight in their deliberations. As early as 1994, John Elkington coined a triple bottom line to inspire business to grant equivalence to environmental, social and economic factors. In 1997, the Global Reporting Initiative launched the first of many initiatives to encourage standardized corporate reporting of such metrics. In 1999, by launching its Sustainability Index based on this nascent data, Dow Jones indicated it was starting to pay attention.

Alas, while this effort played an important early role in prodding companies to look at sustainability factors (often for the first time), the increasing quantity of environmental and social metrics is of decreasing consequence. This is because market environmentalism found itself contending with another major corporate development over the same period – the rise of shareholder value maximization (SVM), a concept forcefully opposed to the idea that companies and investors pay attention to anything but financial numbers. SRI found itself pitted against SVM, and the results continue to be unfavourable for the planet.

The profit enforcement industry

To comprehend the difficulty, one must recognize that the global finance industry effectively acts as an international profit-enforcement agency.

Many investors may balk at this depiction. I admit that I have never met an investor who identified as a profit-enforcement officer and it is a perspective that has only occurred to me upon stepping back from the industry. After all, the finance sector has no overt aspiration in this regard, and it lacks the centralized organization that characterizes law-enforcement bodies. Yet its profit-enforcement nature nonetheless arises as the unplanned outcome of tens of thousands of investment firms simply going about their business. The multitude of individual return-maximizing efforts of competitive and incentivized investors combines to ensure all the economy's tradeable assets are inexorably driven towards their profit-maximizing use.

Indeed, in the variety of investment strategies, one can discern some familiar stereotypes. There are the "good cop" SRI funds and the "bad cop" short sellers. There are the automated CCTV cameras of passive funds, suddenly everywhere. There are even self-appointed SWAT teams of activist investors – ostensibly the good guys, but strangely unnerving when they arrive unannounced.[20]

More importantly, in the overall effect of law enforcement and profit enforcement, there seems to be a clear parallel: law enforcement serves to keep the general public in line; profit enforcement to ensure companies don't lose sight of the bottom line. Markets work because of market discipline, and it is investors who constitute the thin black line.

Make no mistake, as citizens, we affirm profit enforcement to be socially valuable work. Just as not everybody has to be in law enforcement to enjoy its benefits, so the same is true of profit enforcement. Investors comprise less than 1 percent of the overall workforce, but the fruits of their labour run through the economy. That's why we are only too happy to fund them – indeed, willing to pay direct rather than via taxes. With every bank deposit and pension

[20] For an accessible description of the activist business model and the manner in which it may be executed, see: Sheelah Kolhatkar, "Paul Singer, Doomsday Investor", 20 August 2018 https://www.newyorker.com/magazine/2018/08/27/paul-singer-doomsday-investor [accessed 8 July 2019].

allocation, we commit funds to the industry's safekeeping, granting them a small fee in return for their efforts. Inevitably, some years the service doesn't quite live up to advertised promises, but even so, in willing the industry to do well for our own sake, our actions reveal most of us to be good profit-abiding citizens.

Because profit is such a deep shaping force of today's human culture – acknowledged or not – it is of paramount importance that the last four decades have witnessed a major modernisation of profit policing. Principles, procedures and equipment have all been notably upgraded to ensure profit enforcement is executed with unprecedented rigour.

The SVM era

A critical milestone was the 1970s reframing of corporate purpose – from a broad sense of corporate citizenship to a narrower proscription of profit maximization. Milton Friedman's much-cited 1970 op-ed, declaring "the social responsibility of business is to increase its profits", represented the culmination of a Chicago School doctrine that epitomized 20th-century economics' disregard of external costs.[21] It marked the sanctioning of corporate self-interest.

This paved the way for the theoretical articulation of SVM, again implicitly premised on the notion that financial statements embodied a full accounting of a company's value creation or destruction. These ideas gained real-world traction via the political platforms of Margaret Thatcher and Ronald Reagan in the early 1980s – both of whom commanded considerable public support for most of their tenure.

Technological developments added further impetus. A landmark development was the mid-1990s innovation and rapid dissemination of spreadsheet software, which suddenly provided a tool for near-effortless transmission and analysis of financial statements. Fast forward to today: investors have desktop access to comprehensive electronic databases and can readily summon real-time transcripts of corporate pronouncements. In these developments, SVM, which had been gestating through the 1980s, found the technological means to go viral.

Its adoption was bolstered by the convergence of business-school teaching around related techniques of financial analysis that distilled and codified the hard-won lessons of celebrated investment pioneers. This produced a growing pool of bright recruits steeped in SVM principles and methods, if not a richer appreciation of finance's role within society.

Today, though, SVM rides new waves of automation and artificial intelligence, causing "slow" and "biased" human analysts to be extracted from the ever-accelerating clock cycles of profit enforcement as passive and high-frequency strategies take over. Fewer cops are needed to walk the beat.

[21] Friedman's op-ed was deftly constructed. It effectively argued that *either* financial statements already reflected all of a company's value-creation or -destruction actions *or* the government had sufficient authority to ensure this was so, *while simultaneously* offering a justification for companies to resist government efforts to impose new regulations that might harm profits. For, if the expected return on expenditures committed to resisting regulatory changes is greater than the weighted average cost of capital, and if lobbying against regulations is within the "rules of the game", Friedman's contention that companies have a social responsibility to maximize profits equates to firms *having a social responsibility to resist any regulation that appears costly*. Somewhere in all this, the meaning of "social responsibility" was transformed into the exact opposite of its common interpretation.

If I am guilty of stretching a metaphor, it may be to avoid confronting an uncomfortable truth: an initially beneficial notion of introducing the profit motive alongside other mechanisms of social coordination 300 years ago is in danger of being taken to a detrimental extreme, as it is enthusiastically pursued to its logical conclusion. Profit enforcement is increasingly being passed over to artificial intelligence or, which is becoming worryingly similar, to human investors ever more incentivized to suppress so-called "cognitive biases" and to habituate their thinking to the market's partial calculus. This rapidly automating tail of profit enforcement wags the dog of economy and society more vigorously than ever before, based all the while on stubbornly incomplete measures of profit.

And it is into this tide that SRI has striven to make way.

Second thoughts

The dissonance between the two-decade rise of market environmentalism and the continued worsening of major sustainability indicators has prompted some long-time observers to question whether market-led strategies for sustainability can be effective.

Last Summer, Elkington marked the 25th anniversary of his triple bottom line concept by issuing a "product recall" for the whole idea, conceding that environmental and social factors had not attained parity with financial metrics.[22] Pitting values with prices against values without prices was not proving a fair fight.

In a similar vein, in the arena of corporate governance, Leo Strine, Chief Justice of the Supreme Court of Delaware, has also taken up the thankless task of challenging well-intended friends.[23] While sympathetic to the intentions underlying initiatives to expand corporate purpose beyond narrow profit maximization, he nonetheless argues that such efforts fail by their voluntary nature. In the crucible of court proceedings – Delaware is the legal home of 65 percent of Fortune 500 companies – constitutional protections are all on the side of SVM.

Strine concludes that "corporate power is corporate purpose". No matter the broader mission written into a new corporate charter, the actual purpose of a company is merely what those who hold effective power over the company deem it to be. And, in public equity markets – whether they currently own shares or not – that power is effectively wielded by short-term activist investors, who may suddenly appear as owners tomorrow, in so-called wolf-pack

[22] John Elkington, "25 Years Ago I Coined the Phrase 'Triple Bottom Line.' Here's Why It's Time to Rethink It.", *Harvard Business Review*, 25 June 2018 https://hbr.org/2018/06/25-years-ago-i-coined-the-phrase-triple-bottom-line-heres-why-im-giving-up-on-it [accessed 4 February 2019]. "Fundamentally, we have a hard-wired cultural problem in business, finance and markets. Whereas CEOs, CFOs, and other corporate leaders move heaven and earth to ensure that they hit their profit targets, the same is very rarely true of their people and planet targets. Clearly, the Triple Bottom Line has failed to bury the single bottom line paradigm."

[23] Leo E. Strine, *Corporate Power Is Corporate Purpose i: Evidence from My Hometown* (Rochester, NY: Social Science Research Network, 9 December 2016) https://papers.ssrn.com/abstract=2906875 [accessed 5 February 2019]. "By continuing to suggest that corporate boards themselves are empowered to treat the best interests of other corporate constituencies as ends in themselves, scholars and commentators obscure the need for legal protections for other constituencies and other legal reforms that empower these constituencies and give them the means to more effectively protect themselves"; "shareholders are the only corporate constituency with power under our prevailing system of corporate governance."

fashion.[24] The activists' knock on the door is the latent threat that hangs over corporate decision-making. As with law enforcement, profit enforcement achieves much more by deterrence than by actual prosecution.

The unwelcome message, which I suspect neither Elkington nor Strine particularly relished communicating – and with which I concur – is that we delude ourselves in thinking voluntary measures and non-price metrics can challenge the primacy of an SVM mentality applied ever more rigorously to partial P&Ls. Worse, there is increasing opportunity cost to this delusion, in terms of the energy and commitment diverted from initiatives that might make a real difference. In such reflections, the early enthusiasm for the win-win potential of market environmentalism is fading into an uneasy sense that neoliberalism has simply captured environmentalism.

So, 20 years after the dawn of sustainable business, we appear to have reached a crossroads. Paradoxically, even as more and more investors adopt sustainability principles, finally convinced that sustainable investing has financial merit, there may be diminishing returns to SRI as a strategy that can deliver a sustainable human culture. Unfortunately, the "good cop" inclinations of sustainable investors are offset by their broader profit-enforcement duties, which see them reinforcing the validity of the incomplete P&Ls at the heart of our economic system. Even as they build outperforming portfolios that are more sustainable than benchmarks, ESG investors uphold the very price system which other investors can exploit – legitimately and profitably, actively or passively – for directly opposing ends.

To underscore, the problem is not the idea of SVM so much as the application of SVM to today's menu of prices. The value of SVM as a mechanism of social coordination is as great as the prices in our economy are complete.

2. Wishful thinking

To this challenging dynamic, the CSR and SRI movement inadvertently adds unhelpful messaging.

The nature of competitive markets is that companies must talk up their goods and services; lackadaisical marketing rarely works. Hence, while it is not really their fault, commercial norms nonetheless trap sustainable business into portraying its initiatives and products as greater solutions than they often are. Unfortunately, the many individual pitches for more-sustainable products aggregate into a loud, confident signal that business has got environmental protection covered.

Possibly worse is the addendum: "… and it won't cost a thing". Again, this has sincere roots. As noted, sustainable business has landed on many new innovations and investments that have yielded good profits and returns. Yet, the individual claims mask the aggregate reality.
One way to grasp this is that it is nigh-on impossible to make a functioning economy from the companies held in a typical sustainable investment portfolio; too much necessary economic activity is routinely screened out. Similarly, many sustainable businesses continue to depend on input goods and services that wouldn't meet their own sustainability aspirations. Yes, this

[24] John C. Coffee and Darius Palia, "The Wolf at the Door: The Impact of Hedge Fund Activism on Corporate Governance" (Rochester, NY: Social Science Research Network, 4 September 2015) https://papers.ssrn.com/abstract=2656325 [accessed 22 June 2019].

is changing slowly – and the goal is that both these things will one day be possible – but the gap remains formidably large.

The real message, of course, is that business alone cannot solve our ecological problems, and that transitioning to a sustainable economy from here will require Herculean – and expensive – effort. The CSR and SRI movements emerged in a period when it had become impossible to state this truth. Shamefully, certain large corporations committed financial and organizational resources to obfuscate scientific research and prevent implementation of sensible policy responses – which, had they been implemented 20 years ago, would see us on a much more cost-effective trajectory to solving major environmental issues today.

The politics of the time cornered the sustainable business movement into its optimistic win-win framing of the problem, which unfortunately has now bloomed into a broader greenwish – a sort of greenwash gone meta, fuelled mainly by good intentions but characterized by a tendency to let a thin layer of sustainable advances distract attention from the unsustainability of most of the economy.

Fritjof Capra, the long-time systems thinker, frames the challenge for humanity as our need to become ecoliterate – that is, for the entirety of our behaviour to demonstrate full understanding of the natural systems upon which civilization rests.[25] Collectively, we have become much more ecologically aware, but full ecoliteracy still feels a long way distant.

A key success – possibly the key success – of the sustainable business movement is that a new generation of business leadership, having been prompted to think deeply about these issues, now knows the innate truth of what was so vociferously denied: living on Earth, like living in any home, incurs maintenance costs – and we are not paying the bills. Our environmental problems are not yielding to a strategy of merely elevating good intentions within corporate structures bound by commercial imperatives. We will become ecoliterate only when we acknowledge and accept our dependence on natural ecosystems, and when this understanding has infused all our decision-making processes.

3. A systems view

The problems described above arise from system dynamics – whether those be the unplanned outcomes of profit enforcement or the unintended consequences of individual marketing efforts –that counteract the intentions of sustainable business. It is a common characteristic of complex systems that, as they develop, higher-level behaviours emerge that differ from, or even oppose, underlying behaviours. Indeed, if one reviews the historical development of our market system, one starts to discern that our environmental problems may be lagged responses to cultural and systemic changes that date back to (at least) the 18th century. It may be that we can only truly resolve our environmental challenges when we accept their deep roots.

[25] Fritjof Capra, *The Web of Life: A New Scientific Understanding of Living Systems* (Anchor Books, 1997). David Orr may have been first to the term: David W. Orr, *Ecological Literacy: Education and the Transition to a Postmodern World* (SUNY Press, 1992).

An 18th-century problem with a lag

As mentioned, our Enriching yet damage-Accelerating market system only became culturally significant from the 18th century onwards. We must remember that, for all Adam Smith's genuine insight, the only market he ever witnessed was an embryonic force cutting its teeth against much older institutions. Just as 1990s financial analysts extolled the promise of nascent internet businesses like Google and Amazon, but could not foresee the problems that would arise with their scale and eventual dominance, so Smith wrote of an 18th-century market system emerging under the protective canopy of family, community, clan life, religion and government, concealing the market's incipient flaws. Smith's market was a peripheral phenomenon. The killer app of his day? Shoes. (Sort of like when Amazon just sold books.)
Though the market's incomplete grasp of human values would gradually become evident, the 20th-century case for the market as a public choice mechanism superior to all other alternatives relied on an unrealistic model of complete markets. This alluring vision provided the intellectual justification both for the neoliberal programme to make markets matter more and, consistently, for an SVM philosophy to make the market domain more efficient. The case for market primacy was unquestionably bolstered by the disasters of Socialist and Communist experiments, which amply demonstrated the hazards of too little market or none at all, though these examples were transmuted into an equal-and-opposite stance of "as much market as possible", which doesn't necessarily follow, but which condoned the dismantling of regulatory, redistributive and anti-trust buttresses for the market's real vulnerabilities. In all of this lay the fervent hope that the eternal political dilemma of how to organize society had finally been revealed to be no more than a maths problem; but this was a Pyrrhic victory of rational thinking over reasonable thinking – indeed, a victory so decisive that our discourse has lost sense of the distinction.

The elevation of market principles to the centre of our culture's decision-making processes unavoidably brought with it the market's blind eye to broader social and environmental values. Sustainable business's noble intention has been to fill the gaps – but it has been uphill sledding. Today's pervasive neoliberalism has subverted the role of government as the appropriate domain for resolving public goods problems, while modern profit-enforcement strictures have removed corporations' ability to make the social and civic contributions of yesteryear.

Today, companies can only pursue sustainable behaviours that are profitable. This rules out many sustainability actions that corporations are uniquely positioned to offer – and used to provide – though certain initiatives can make the grade as long-term investments, with characteristic extended payback periods. Yet, corporate pronouncements of such long-term investment plans are precisely the klaxon calls that bring activist investors running to restore short-term profit-maximizing order.[26]

Properly understood, then, our 21st-century environmental problems are 18th-century problems with a lag, given a late 20th-century booster. This is not to suggest we simplistically roll back the clock; only that resolving our environmental problems will require both massive

[26] Several recent developments have both lowered the costs of activist intervention and increased the likelihood of success. Key changes include the trend to destagger boards from 2005 onwards (reversing prior best practice), the rise of proxy advisers and the willingness of large passive investors to follow activists' lead on governance matters because it suits their low-cost business model (Coffee & Palia, 2015; Gilson & Gordon, 2013). Combined, these developments have structurally nudged public equity markets towards greater short-termism.

deployment of the technology that markets have enabled and a more honest acceptance of what was unknowingly jettisoned in the major cultural realignments of those periods – principally, certain norms and reciprocal obligations that now appear vital for societal health, but which can only be upheld by non-market institutions.

At almost the same time that economist Friedman was advocating his narrow frame for social responsibility, Gregory Bateson, one of the 20th century's great systems thinkers, offered a broader perspective on the human predicament. "The unit of survival," he wrote in 1972, "is the organism plus environment. We are learning by bitter experience that the organism which destroys its environment destroys itself."[27]

Bateson's was an early articulation of the now widely accepted interdependency of species and ecosystems, overturning the perception, dominant since Darwin's time, of species as separable units of survival. Though Bateson was contemplating the physical environment, his idea extends to each individual's dependence on society – of which there is indeed such a thing.

Bateson's insight was born of the sort of systemic appreciation of the world from which 20th-century Economics had sealed itself off. It is because we have elevated Friedman's reductionist-inspired frame of "social responsibility" to the heart of today's decision-making process that we are struggling to respond to Bateson's systemically informed warning.

Forced to ride these deeper tides, today's sustainable business movement amounts to sincere and increasingly vigorous effort, nonetheless applied at the wrong level of our complex social system to be as effective as hoped. Fifty years after Friedman argued for diminished obligations for business, well-intended corporations are trying to make a difference from within straitjackets of self-interest.

Diminishing returns to reporting

One of the signal indicators of ensuing struggle is the ongoing allocation of energy to reporting and disclosing companies' individual environmental and social performances. Unfortunately, this strategy is now 20 years long in the tooth, and exhibits diminishing returns to detail and effort.

When reporting frameworks first appeared in the late 1990s, they served the invaluable role of forcing companies to regard their business in a brand-new light, fostering a new ecological awareness and teasing out new areas of innovation that, now discovered, are propelled by market forces as conventional business opportunities – no special treatment required. In contrast, where reporting dutifully flags environmental problems that still challenge profitability, such metrics evidently struggle to earn parity with financial numbers.

There is perennial hope that the next iteration of metrics might finally crack the code and earn equivalence, yet it starts to feel as though we are engaged in a continual cycle of generating more and more detailed numbers destined for second class status when push comes to shove. They are metrics investors consider but, unlike profit numbers, rarely lose sleep over. Even the logical development of integrated reporting – literally putting profit and ESG data on the same pages – cannot overcome the fact that financial and non-financial figures constitute

[27] Gregory Bateson, *Steps to an Ecology of Mind* (Ballantine Books, 1972) , p. 491.

two different castes of number. While the disclosure of ESG metrics remains an important discipline for sustainable business, its original power as a novel stimulus has inevitably diminished with time.

A Systemic Response

The enthusiasm for reporting and disclosure strategies epitomizes a broader challenge: sustainable corporations are directed by business norms towards showcasing, and seeking credit for, their own piecemeal efforts rather than towards collaborating for the system change now required. At the planet-level – the system level that matters – it is evident that we need to make more progress more quickly than individualist approaches permit. Regarding the overall shape of the system challenge, we are like Robert Frost's traveller, faced with two divergent roads – but we must take both at the same time.

More and less market

On the one hand, we must use market mechanisms much more than we are – in a sense, push on with the task of "completing" our 300-year-young market. Above all, we must use price signals – whether from direct taxes and charges on environmental damage or regulations placing an implicit price on such damage – to begin to close the gap between the effective-zero pricing of our environment and the high value it provides. This is to transfer values from the empty margins into the profit margins that count. Our 300-year experience of the market plainly demonstrates the power of prices to steer innovation and we must now ensure we have prices in place that guide us away from harming our ecosystem.

At the same time, we must ease market logic from the primacy it has abruptly assumed within our overall decision-making space, which will require disavowing some of its claims to superiority. Even though we can use the market more, the market can never feasibly be complete; yet most of the arguments made for its primacy implicitly assume so.[28] A systems view recognizes that we each live amid a complex web of interactions and exchanges that extends far beyond the relatively few first-order exchanges the market system can grasp. In the absence of complete pricing of these interactions, the claims for the superior efficiency of market outcomes are vacuous. If not everything can be priced, how can the efficiency of any outcome be determined? There is nothing efficient about two centuries of Enrichment that comes at the cost of a stable atmosphere.

[28] There are several technical barriers to arriving at a complete market, in practice. For example, Geoffrey Hodgson, the institutional economist, points out that a complete forward market for labour would be tantamount to legitimizing slavery (Geoffrey M. Hodgson, *Conceptualizing Capitalism: Institutions, Evolution, Future* (University of Chicago Press, 2015)). Another example is that, while much information is routinely traded, it is generally impossible to charge a price to disclose the price of something! There is a nice irony that, for markets to work, price must be free. A broader problem is that markets can only track exchanges, not the development of capacities (friendships, community relations etc.) not subject to exchange. It is interesting that Mathematics and Law – older fields that had the same aspiration for an all-encompassing self-consistency – are both long reconciled to the innate "incompleteness" of their systems; e.g., Godel's "incompleteness theorem" and Durkheim's observation: "for in a contract, not everything is contractual". I am unaware of any similar, widely accepted statement of the necessary incompleteness of markets, though such a formulation might beneficially crystallize that economics' claims are bounded. Effectively, it would be reinterpreting Arrow-Debreu's model as an incompleteness theorem.

In addition, while free market advocates rightly point to the many benefits that have coincided with the market's long ascendancy – such as enhanced freedoms, technological advances and higher standards of living – these have been over-attributed to the market alone, when history makes clear such benefits have arisen from markets co-existing with, and being underpinned by, vibrant non-market institutions. Indeed, the strong free market case that has been so influential in this recent period of human history depends on a curious combination of an idealized vision that can't exist and over-appropriation of cultural advances for which the market has been a partial, not sole, cause. These claims are then bizarrely deployed by those well-served by current price structures both to justify today's market scope and to argue against new price signals they perceive to be detrimental. The incoherent assertion is often that today's markets have emerged naturally, whereas any further extension would amount to government interference. Yet, rule of profit has always been wholly dependent on rule of law.

Unfortunately, a dangerous asymmetry has evolved in our political discourse, wherein market failures are deemed tolerable while government failures are ruinous. Our terminology captures the double standard: markets "creatively destruct"; governments just fail. Instead, it seems more likely that all our social coordinating mechanisms succeed and fail in their own particular, yet often complementary, ways.

How to reconcile the seemingly counterintuitive notion of more and less market at the same time? Effectively, human culture must come into a new and different relation to markets, recognizing that the market mechanism is a potent tool – but still only a tool. Like fire or electricity, the profit motive is most beneficial to human culture when safely harnessed and appropriately directed, in which form it can be deployed more and more widely. In a sense, the story of the last 300 years is that we have discovered the awesome power of the profit motive but not yet fully harnessed it. It is unquestionably a fine balance to strike, but we must err on the side of shaping markets, not being shaped by them.

Systemic intervention

Fortunately, my critique suggests the opportunity – the low-hanging fruit for meaningful corporate action now lies firmly on the side of systemic intervention. As ecological pressures rise, so, too, does the bar for private-sector leadership on sustainability. It is no longer about what individual companies can do; it is about what the private sector can do, together, to drive systemic change.

The disclosure now required is not more detail about a company's own greenhouse gas emissions or water use, but rather what companies publicly stand for regarding the changes in rules and prices needed for a more sustainable world – and what, exactly, they are doing about it. This is the critical question we must now ask our portfolio managers and corporations.

Of course, many businesses will protest that they are not constituted as political organizations. Yet, this seems a poor depiction of reality; corporations are heavily involved in political issues, as the coordinated obstruction of environmental policies in the 1990s testifies and as everyday lobbying confirms.

The bigger obstacle is whether we have now bound companies so tightly to the mast of self-interest that they cannot support policy measures to protect the planet for fear of harming short-term profits. Indeed, for me to suggest that companies can overcome the diminishing

effectiveness of voluntary efforts by now advocating for systemic change may just be to swap one form of wishful thinking for another.

Hence, it may have to be up to the human beings that work in corporations to reflect on whether the sustainable potential of their organizations is ever thwarted by commercial imperatives, and, if so, what that implies about our market system. Those people genuinely motivated by the original intentions of SRI and CSR may now achieve more by encouraging their businesses away from further individual effort and towards collaboration that can make a bigger difference. Just as the early years of sustainable business saw individual "champions" introducing ecological awareness into the C-suite, so a new generation of champions must now promote greater systemic understanding and action within business.

If nothing else, we must formulate as soon as possible a new minimum standard of social responsibility by which corporations pledge not to compromise societal efforts to protect our collective home. This would hardly constitute ecoliteracy, but it would be a small step towards unpicking the eco-illiteracy of our current system. A public pledge to not obstruct environmental protection policies could conceivably even be audited and verified by third parties.

Conclusion

My comments may upset or dishearten members of the sustainable business community, but in many respects, that community has successfully laid the foundations for future efforts. Sustainable business remains a necessary but not sufficient element of a sustainable culture, yet there is increasing risk that, in its enthusiastic embrace, we deem it sufficient. This is no fault of those who have propelled sustainable business to its current point – indeed, it is much more a case of successful execution of a genuine opportunity that unfortunately now appears more limited as an ecological strategy than we had all first hoped.

What would be a mistake is for the sustainable business community – and society more broadly – to deny the crossroads we have reached. Today, our rapidly deteriorating environmental situation prompts repeated and justified calls for urgent response. The sustainable business movement must avoid falling into the trap of responding simply by pursuing existing strategies with more urgency, and instead urgently adopt new strategies that the moment demands. As the sustainable business paradigm reveals its limits, businesspeople collaborating to demand sustainable policies might now achieve more.

Bibliography

Bateson, Gregory (1972) *Steps to an Ecology of Mind*. Ballantine Books.

Blankenberg, Ann-Kathrin, and Jonas F. A. Gottschalk (2018) "Is Socially Responsible Investing (SRI) in Stocks a Competitive Capital Investment? A Comparative Analysis Based on the Performance of Sustainable Stocks", SSRN Electronic Journal, https://doi.org/10.2139/ssrn.3186094.

Capra, Fritjof (1997) *The Web of Life: A New Scientific Understanding of Living Systems*. Anchor Books.

Elkington, John (2018) "25 Years Ago I Coined the Phrase 'Triple Bottom Line'. Here's Why It's Time to Rethink It.", Harvard Business Review, 25 June 2018 https://hbr.org/2018/06/25-years-ago-i-coined-the-phrase-triple-bottom-line-heres-why-im-giving-up-on-it [accessed 4 February 2019]

Geyer, Roland, Jenna R. Jambeck, and Kara Lavender Law, "Production, Use, and Fate of All Plastics Ever Made." *Science Advances*, 3.7 (2017), e1700782 https://doi.org/10.1126/sciadv.1700782

Global Reporting Initiative (2017) *GRI Annual Report 2016-2017* https://www.globalreporting.org/resourcelibrary/GRI%20Annual%20Report%202016-2017.pdf [accessed 20 November 2019]

Global Sustainable Investment Alliance (2017) *Global Sustainable Investment Review 2016*, March http://www.gsi-alliance.org/wp-content/uploads/2017/03/GSIR_Review2016.F.pdf [accessed 19 November 2019]

Grantham, Jeremy (2018) "The Race of Our Lives Revisited" (GMO, August 2018), p. 35 https://www.gmo.com/europe/research-library/the-race-of-our-lives-revisited/ [accessed 19/11/2019]

Hodgson, Geoffrey M. (2015) *Conceptualizing Capitalism: Institutions, Evolution, Future*. University of Chicago Press.

Kolhatkar, Sheelah (2018) "Paul Singer, Doomsday Investor", 20 August 2018 https://www.newyorker.com/magazine/2018/08/27/paul-singer-doomsday-investor [accessed 8/7/2019]

Le Quéré, Corinne, Robbie M. Andrew, Pierre Friedlingstein, Stephen Sitch, Judith Hauck, Julia Pongratz, and others (2018) "Global Carbon Budget 2018", Earth System Science Data, 10.4, pp. 2141–94 https://doi.org/10.5194/essd-10-2141-2018

McCloskey, Deirdre N. (2011) *Bourgeois Dignity: Why Economics Can't Explain the Modern World.* University of Chicago Press, 2011.

Orr, David W. (1992) *Ecological Literacy: Education and the Transition to a Postmodern World*. SUNY Press.

Pigou, A. C. (2013) *The Economics of Welfare.* Palgrave Macmillan.

Ripple, William J., Christopher Wolf, Thomas M. Newsome, Mauro Galetti, Mohammed Alamgir, Eileen Crist, and others (2017) "World Scientists' Warning to Humanity: A Second Notice." *BioScience*, 67.12, pp. 1026–28 https://doi.org/10.1093/biosci/bix125

Steffen, Will, Paul J. Crutzen, and John R. McNeill (2007) "The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature", AMBIO: A Journal of the Human Environment, 36.8, pp. 614–21 https://doi.org/10.1579/0044-7447(2007)36[614:TAAHNO]2.0.CO;2

Strine, Leo E. (2016) *Corporate Power Is Corporate Purpose i: Evidence from My Hometown.* Rochester, NY: Social Science Research Network. 9 December https://papers.ssrn.com/abstract=2906875 [accessed 5 February 2019]

United Nations (2019) "UN Report: Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating'", United Nations Sustainable Development, 2019 https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report [accessed 20 November 2019]

World Inequality Lab (2018) *World Inequality Report 2018* https://wir2018.wid.world/files/download/wir2018-full-report-english.pdf [accessed 19 November 2019].

World Meteorological Organization (2019) "State of the Climate in 2018 Shows Accelerating Climate Change Impacts", World Meteorological Organization, https://public.wmo.int/en/media/press-release/state-of-climate-2018-shows-accelerating-climate-change-impacts [accessed 20/11/2019]

Author contact: duncanaustin@msn.com

SUGGESTED CITATION:
Austin, Duncan (2019) "Greenwish: the wishful thinking undermining the ambition of sustainable business." *real-world economics review*, issue no. 90, 9 December, pp. 47-64, http://www.paecon.net/PAEReview/issue90/AustinD90.pdf

You may post and read comments on this paper at https://rwer.wordpress.com/comments-on-rwer-issue-no-90/