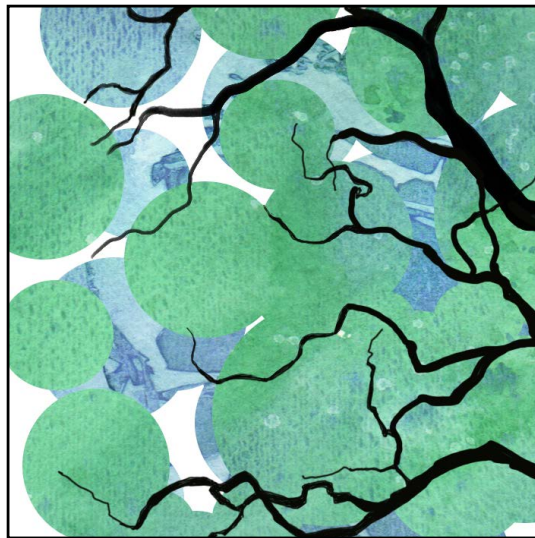
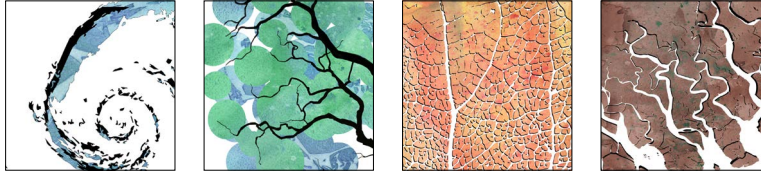


FINANCE FOR A REGENERATIVE WORLD

JOHN FULLERTON



ACT II: THE FATAL FLAWS OF FINANCE



REGENERATIVE FINANCE IN 4 ACTS

INTRODUCTION

ACT I: CONTEXT²

- I. A Fresh Look at Finance
- II. The Six Functions of Finance
- III. The Regenerative Paradigm

ACT II: THE FATAL FLAWS OF FINANCE

- I. Finance Ideology: A Confusion of Means and Ends
- II. Confusion of Investment with Speculation
- III. The Limits of Markets
- IV. The Agency Problem of Misaligned Incentives
- V. Limits to Investment
- VI. Appendices
 - Appendix A: Regenerative Principles
 - Appendix B: Flawed Modern Portfolio Theory
 - Appendix C: Ethics in High Finance

ACT III: TOWARDS REGENERATIVE FINANCE AND A NEW INVESTMENT THEORY

ACT IV: AGENDA FOR GENUINE FINANCIAL REFORM

² Finance for a Regenerative World Act I: https://issuu.com/capitalinstitute/docs/regen_finan_rvsd_interactive_final3?e=33301005/65770724



INTRODUCTION

I WOULD REMIND YOU...THAT SOCRATES WAS EXECUTED NOT FOR HIS MEGALOMANIA OR GRANDIOSE PROPOSITIONS OR CERTITUDES, BUT FOR STUBBORNLY DOUBTING THE ABSOLUTE TRUTHS OF OTHERS.

— *John Raulston Saul*

Act II of “Finance for a Regenerative World” identifies the five principle flaws of contemporary finance viewed through our regenerative, living-systems lens. We intentionally avoid issues of human greed, ethical breaches, and failed leadership, reserving that discussion for the Appendix to this paper. Our attention here is focused on the systemic flaws that cannot be fixed by human behavior alone.

The Death of Socrates,
Pierre Peyron

Our inability to confront these fundamental flaws collectively is undermining the health of our political economy, and even threatens its viability. With a failing political economy, societal health is degrading despite the many outward signs of simultaneous progress. Symptoms of our failing political economy include extreme and accelerating inequality, with corresponding threats to health and wellness, and the populism and political division unseen in modern times representing a threat to democracy itself. Additionally, the cascading threats and damage caused by climate change as well as the broad-based degradation to vital ecosystem functioning are directly linked to the fatal flaws in finance we will discuss. No matter how we attempt to regulate (or deregulate) the financial system, these flaws will continue to undermine societal wellbeing unless we confront and “stubbornly doubt the absolute truths” that provide cover for them.

We can no longer accept this status quo, no matter the political difficulties and consequences. We must confront conventional wisdom head on when it is clearly wrong and dangerous. Our priority must be to get clear on root causes, rather than reacting to symptoms. Only then can genuine remedies for lasting systemic change be found.

Readers will discover that we do not cast the blame on derivatives, securitization, or financial engineering in general for the systemic “flaws” we enumerate. Like all technologies, they can be, and are, used for good or ill, although technological advances do accentuate and accelerate the consequences of the underlying system flaws, most importantly the entire finance ideology itself. We also don’t indict “deregulation” as a root cause of what’s gone wrong, although in certain instances it certainly enabled the flaws in the system to manifest with greater damage to society than would otherwise have been the case.

Let us now turn to finance’s fatal flaws, using our eight principles of regenerative economies first introduced in 2015 in “Regenerative Capitalism: How Universal Principles and Patterns Will Shape Our New Economy”² as the lens through which we examine the financial system. As a refresher, the eight principles are presented in Figure 1 below, and described in more detail in Appendix A:



2 <http://capitalinstitute.org/wp-content/uploads/2015/04/2015-Regenerative-Capitalism-4-20-15-final.pdf>

I. FINANCE IDEOLOGY: A CONFUSION OF MEANS AND ENDS

PERFECTION OF MEANS AND CONFUSION OF GOALS SEEM, IN MY
OPINION, TO CHARACTERIZE OUR AGE.

—Albert Einstein, *Out of My Later Years*, chapter 14 (1950)

Our hypothesis is a simple one: the root cause of our financial system's disease is *the system design itself*, not deregulation, bad behavior, too much debt, or for that matter, any diagnosable symptomatic "problem." Critically, we have failed to question the design of the system, which is why it continues to operate so perniciously. The system design in turn is based on a false ideology, which at its core confuses *means with ends*.

Nowhere is this false finance ideology more clearly delineated than in the concept of "shareholder value," the idea popularized by General Electric CEO Jack Welch in the early 1980s. The theoretical foundation for the idea can be found in the seminal paper, "Theory of the Firm: Governance, Residual Claims, and Organizational Forms" (1976)³ by Michael Jensen and William Meckling, both professors at the University of Rochester's William E. Simon Graduate School of Business when the paper was first published.

Interestingly, the paper's abstract refers to "the completeness of markets problem." As we will explore in depth below in our discussion of the limitation of markets (where we challenge the notion that incomplete markets are a problem at all), it is a concept intrinsic to the ideology of shareholder value that dangerously conflates means with ends. This flawed idea has, in turn, become embedded in the finance ideology that now dominates, and is quietly subverting, our political economy.

As before, the keepers of the narrative dress up the role of finance as innovative risk taking on the part of financiers in pursuit of "the efficient allocation of capital in order to foster economic growth," which in turn is believed to be (as an unquestioned "absolute truth") the pathway to prosperity for all. The not-so-subtle message is, such risk-taking is essential to the system, so if it entails seemingly unfair and even reckless behavior, then that is the price we are willing to pay for the greater good of economic growth.

This is the same logic that led the keepers of the narrative to rule out the option of nationalizing miscreant and insolvent banks during the financial crisis. After all, the temporary takeover would have wiped out all their shareholders' equity, including the

3 <https://www.sciencedirect.com/science/article/pii/0304405X7690026X>

banks management's large personal stakes. Based on their administrations' actions during the financial crisis, it is clear that both President Bush and President Obama were complicit in this ill-conceived narrative, which was accepted at face value by moderates of both political parties. Tragically, because of their blind adherence to a flawed narrative, the country missed its chance to restructure its finance industry more in alignment with the regenerative principles of healthy and sustainable natural systems. That realignment would have better supported the transition to a more resilient and productive real economy.

BOTH PRESIDENT BUSH AND
PRESIDENT OBAMA WERE
COMPLICIT IN THIS ILL-
CONCEIVED NARRATIVE

The confusion of means and ends is actually compounded here. At one level, we have the confusion that undifferentiated economic growth leads to greater prosperity. The reality is in fact far more complex. Certainly, economic growth that represents the costs associated with a rise in police calls for domestic violence or drug overdoses, or the costs associated with cleaning up the disastrous BP oil spill, do not constitute a rise in prosperity. A large body of literature exists pointing out the failure of GDP growth to generate the prosperity we all want, but that is a subject for another day. ⁴ Bottom line, GDP growth is now confused as an end in itself, when it was designed only as one indicator of progress. In fact, when Simon Kuznets introduced the measure in 1934 in a report to Congress, he explicitly warned against its use as a measure of general welfare.

The second layer of confusion of means and ends relates strictly to finance, and capital markets in particular, and is of prime concern to us here. The finance narrative states that financial capital must seek the highest risk-adjusted return on investment, irrespective of the qualitative factors that such investment impacts, often for years into the future. So, the argument goes, a 15 percent internal rate of return is better than a 10 percent internal rate of return to the investor, no matter how it is generated. Nuances such as whether an investment is real or speculative, extractive or productive to society are simply not reflected in the internal rate of return. And measurements of "risk" when considering risk-adjusted returns, refer only to the financial risk, typically the statistically expected volatility of expected financial returns. There is nothing in the finance ideology that refers to the risk to the greater economy, society, or planet of a particular investment. So, for example, the carbon emissions of a coal plant, the loss of soil fertility and biodiversity of industrial agriculture, or the loss of a downtown shopping district and the goods and money it recirculates within the community, as well as the impact on local employment and the municipal tax base when a super store moves outside of town, simply are outside the risk calculus of finance.

4 <https://www.bu.edu/pardee/files/documents/PP-004-GDP.pdf>, and,
<https://www.demos.org/publication/whats-missing-gdp>

Furthermore, the narrative continues, a higher “risk-adjusted financial return” (that is financial risk defined as above) translates into a more efficient allocation of capital, leading to enhanced economic growth and therefore societal prosperity. Progress means capital is free to “maximize return,” which is conveniently both good for the allocators of capital and good for society. And furthermore, if capital does not seek to maximize risk-adjusted return, the competitive marketplace will slowly if not quickly erode that capital in the dog-eat-dog world of competitive finance. This is the dominant finance ideology at work in the real world today, in which success is defined only in terms of its reductionist self, implicit even in the language, internal rate of return (“IRR”). There is no systemic rate of return concept in modern finance —what we might call the “SRR”, meaning the holistic return to the entire system.

THERE IS NO SYSTEMIC RATE OF RETURN CONCEPT IN MODERN FINANCE —WHAT WE MIGHT CALL THE “SRR”, MEANING THE HOLISTIC RETURN TO THE ENTIRE SYSTEM.

Can We See Finance Through a New Lens?

To see clearly what needs to be done, we need to first shed the shackles of this flawed ideology. We actually must shift the way we think.

The scientific revolution has yielded many societal benefits, great discoveries, and a better understanding of our material world. The scientific method is premised on reductionism— breaking down something complicated into its component parts to better analyze and understand it. However, reductionism has critical limitations when we are trying to understand complexity. Systems thinker Nora Bateson wisely points out that the opposite of complexity is not simplicity. The opposite of complexity is reductionism. And leading regenerative agriculture and systems thinker Wes Jackson

THE OPPOSITE OF COMPLEXITY IS REDUCTIONISM.

aptly warns: “there’s nothing wrong with the reductionist method so long as we don’t confuse the method with how the world actually works.”

Holism,⁵ in contrast to reductionism, asks us to see the world as a system of fractal or nested relationships. Molecules (carbohydrates, proteins, etc.) combine to create cells, which combine to create organs (heart, lungs, arteries), which in turn work

⁵ Smuts, Jan *Holism and Evolution* (1926). Jan Smuts, a famous Boer War general who went on to become Prime Minister of South Africa, coined the term “holism” in his extraordinary book. He explains holism as “the universal principle that describes matter, life, and spirit,” aligned with our much later understanding of the fractal nature of the universe. His magnum opus is dense and scientific, praised by Einstein with whom he exchanged letters about the concept of holism and its importance. It is a far cry from the simplistic and “new agey” holism about which readers may be justifiably skeptical.

synergistically to create sub-systems like the cardiovascular system. These subsystems are all nested within a body to create the potential that is far greater than the sum of these parts: living, working, thinking, learning beings. Even at a non-material level it appears such patterns exist as well, including at the level of consciousness, according to leading theories of quantum physics.⁶ Holism describes the essential hierarchy of wholes and their complex interrelationships, while reductionism is a useful method to break down what's complicated into parts that can be studied and acted upon discretely from one another. But we must not forget that such reductionist understanding of parts is incomplete, and it misses the most important understanding of the greater whole.

We live at a time of great change. If we are to navigate through it successfully we must integrate our distinct siloes of expertise —medicine, education, science, and, yes, economics and finance — into a trans-disciplinary, holistic framing. The essential reality is that we are stuck in a reductionist worldview; we are so focused on diagnosing the ailments of individual trees that we have lost sight of the health of the essential forest. So we invest in drugs to treat symptoms of cancer, calling it a “cure,” rather than investing in our immune system health, which we know how to do and which could dramatically reduce the incidence of cancer in the first place. So too, in the field of finance, we apply stricter regulation to errant banks after they blow up the economy and damage society, instead of investing in a study of what makes a healthy economy and what role finance should play in its service. At the same time we fail to identify what activities undermine systemic health in the first place so we can discourage or ban them. Of course memories fade and the cycle repeats itself.

Applied to human civilization, holistic principles offer a very clear way to order our priorities: the finance sector—its private and public portions inextricably interlinked—must be understood as a subsystem in service to a healthy real economy. Our economy, in turn, is best understood as our political economy, as it had been before we tried to turn economics into a hard science. Indeed our political life and our economic life are inseparable, contrary to modern accepted wisdom. Our political economy is itself embedded in human societies and local cultures, which are themselves embedded in global civilizations, which, in turn, are embedded in our natural world, along with other living and non-living beings. When we perceive the world through a holistic framing, its nested order reveals itself, and we can predict the disasters that will ensue when the natural hierarchical order is inverted. We are witnessing those disastrous consequences today—as finance drives all the systems it should instead be nested within and serving—patterns of collapse across social, environmental, political, economic fronts.⁷

6 Zohar, Dana, *Quantum Society: Mind, Physics & A New Social Vision* (1995)

7 Diamond, Jared, *Collapse: How Societies Choose to Fail or Succeed* (2005)

What is unique in our time is the completion of finance ideology's assault on all aspect of our lives. Finance, which must be the servant in the natural order, has become the master. The tail is wagging the dog.

We have evolved to the point where the nested holarchy is exactly the opposite of what it should be. No regulatory tweaking, no fines, however hefty, will fix it. We have seen it all in the inadequate response to the financial crisis of 2008: 22,000 pages of Dodd-Frank legislation written in the United States, containing good features but also unintended consequences;⁸ an enormous response from bank regulators around the world led by the Bank for International Settlements and their new and more prudent capital and liquidity rules; \$200 billion in fines imposed; and the demands of world leaders from their bully pulpits. Yet with all those well-intentioned actions, we have not even begun to eradicate the pernicious cancer of our finance ideology-- our confusion of means and ends.

FINANCE, WHICH MUST
BE THE SERVANT IN THE
NATURAL ORDER, HAS
BECOME THE MASTER.

As we know all too well, our response to the financial crisis only served to bolster the very firms that, through their irresponsible behavior, brought the global economy to its knees, because we feared what would happen to the real economy if we failed to save them. To be fair, that fear was in some sense justified, given the present structure of the financial system and credit markets in particular. Clearly, too big to fail banks and the interconnected hedge fund/private equity fund/special-purpose-vehicle shadow-banking system of finance have a firm grip on us, dictating the range of possibilities we can now even imagine. But the grip of this finance ideology extends far beyond the financial sector.

In business, CEOs of the most powerful and impactful institutions in the history of human civilization pursue the optimization of "shareholder value" (one of finance ideology's central tenets as we have discussed)⁹ in order to respond to the short-term demands of the speculator- dominated market. Shareholder value dogma drives the critical decision-making that sets the terms of economic exchange throughout the supply chain of global finance-driven capitalism, determining, in the process, the quality of human lives, the culture and makeup of the cities we live in, the political process, and the quality of our natural environment. Business "leaders" (and our

⁸ JPMorgan Chase CEO Jamie Dimon points out that the enormous complexity and compliance costs of Dodd-Frank create economies of scale benefits to the largest banks like JPMorgan and constrain the ability of new bank entrants to compete. Indeed, there have been few if any new regulated banks created in the United States since Dodd-Frank was passed. Instead, the big (colossal really) have grown only bigger and more entrenched.

⁹ Notwithstanding this still predominant practice, there have been developments around the idea of "stakeholder value," that are seeking to harmonize the returns to all stakeholders including employees, communities, and the environment. But it is too early to assess the practical impact of this more enlightened approach.

business schools) ask: “What is the business case for sustainability” rather than “what is the sustainability case for my business?” It is not hyperbole to suggest that the mindless pursuit of shareholder value as an ideology leads directly and indirectly to the destruction of healthy human communities, as well as the biosphere’s vital ecosystem functions, threatening life on earth through climate change, desertification, and species extinction.

Central bankers, virtually held hostage to it, focus policy on anticipating market reactions as much as to the fundamentals of the real economy. The institution of financial journalism, critical to the functioning of a free democratic society but also trapped in these same “absolute truths”,¹⁰ has been too often reduced to a viewer ratings competition as media outlets struggle for survival, putting the short-term demands of financial markets ahead of their higher purpose to inform society, including to alert us when finance ideology is a root cause of the issues that now threaten our very survival as a species. Talk about an unreported story that should be capturing headlines!

BUSINESS “LEADERS” (AND
OUR BUSINESS SCHOOLS)
ASK: “WHAT IS THE BUSINESS
CASE FOR SUSTAINABILITY”
RATHER THAN “WHAT IS THE
SUSTAINABILITY CASE FOR MY
BUSINESS?”

This finance ideology permeates every sector of society. Our healthcare system, for example, is driven by shareholder-value maximization strategies that too often prioritize profiting from sickness over promoting societal health and well-being. Even non-profit civil society organizations are forced to shift their “business model” to capture earned income streams and/or to take money with private agendas attached, even as they seek to serve the needs of the impoverished or conduct original research for the public good. Higher education is morphing into trade school to develop “marketable” skills rather than exploring the great questions of the ages. Finance ideology now defines the value system of society. The search for truth and meaning, and values like care for our fellow man much less stewardship for the planet, have all been subjected to its iron fist.

In the public sector too, financial cost-benefit analysis dominates policy decision-making, leading at the extreme to the moral absurdity of analyzing climate change through only a financial lens rather than an ethical lens. As a result, our great

¹⁰ I have had personal conversations with leading journalists from such publications as the Financial Times, the Economist, and the New York Times and been consistently baffled at their unwillingness to confront this finance ideology. Much safer I suppose to attack miscreant bankers than to question the entire system design, which of course drives their own business models and is the foundation of their personal identities and professional credibility.

economic thinkers debate the appropriate level of future discount rates¹¹ for destroying the planet. In fact, in 2018, the Swedish Prize for Economics in honor of Alfred Nobel was awarded to William Nordhaus whose work on the social cost of carbon reflects the state-of-the-art thinking in conventional economics using cost-benefit analysis. His conclusion: It's better to do nothing about climate change than try to adhere to either the UN's initial 2 degree warming goal, or its more recent and critical 1.5 degree warming limit.¹²

How is this possible, a middle-schooler might ask? Because, the "logic" goes, it will impede the growth rate of GDP! Nordhaus's cost-benefit analysis translates into a warming target far above the 1.5 degree outer limit that real climate science warns us not to exceed. Yet, our Nobel laureate in "environmental economics" claims, it is better to destroy the planet and life as we know it than to adversely impact the growth rate of GDP. Never mind the debate about the validity of the assumptions in the model, or all of our understanding that GDP does not equal prosperity in the first place. Somehow the human, non-human, and economic costs of rising seas, biodiversity loss, and a largely uninhabitable planet fail to show up in the models for which we award the most prestigious prize in economics! And I get emails from friends suggesting how happy I must be that the Nobel Committee recognized how important climate change is to economics.

YET, OUR NOBEL LAUREATE
IN "ENVIRONMENTAL
ECONOMICS" CLAIMS, IT
IS BETTER TO DESTROY
THE PLANET AND LIFE AS
WE KNOW IT THAN TO
ADVERSELY IMPACT THE
GROWTH RATE OF GDP.

The unquestioned (at least by powerful elites on both sides of the political spectrum) "absolute truths" of our finance ideology violate the natural order of things and our common sense. In the process, our finance ideology undermines systemic health. Like a cancer cell, it literally subsumes its host and destroys all the larger "wholes" of which it is a part in the process: political economy, society, culture, civilization, and ultimately, the healthy functioning of the biogeochemical cycles of planet Earth itself upon which our civilization is based.

In short, finance ideology is literally killing us — slowly, stealthily, but surely.

Remember, by finance ideology, I am not referring to the ethical failures that inspired

11 The discount rate is the key variable in present value analysis. It is the interest rate by which a future cost (in this case the costs of climate change) is discounted back to the present. This is absurd on multiple fronts. First, that the moral costs of a climate catastrophe are quantifiable in the first place, and second, to the extent they are, that our willingness to act today would be predicated upon some careful set of analytical assumptions which would instigate an academic debate over the discount rate chosen (and the resulting actions to take as a result).

12 <https://www.econlib.org/library/Columns/y2018/MurphyNordhaus.html>

“Occupy Wall Street” and Bernie Sanders, as damaging as these failures have been and continue to be. Even if Wall Street were inhabited solely by professionals of the highest moral standards, the current ideology-driven flawed system design would generate the same catastrophic consequences, albeit more surreptitiously. In this sense, Bernie Madoff and lesser pyramid schemers, insider traders and banksters—jailed and unjailed—the Vampire Squid, liar’s loans, the LIBOR scandal, Swiss bank accounts to avoid taxes, hedges that became trades like the London Whale, foreclosure mills subsuming even our veterans’ families lives, money laundering for drug dealers and oligarchs, two million, phony, fee-generating credit card accounts, and all the rest, should be seen as cancerous tumors, *mere symptoms of an underlying disease*.

To date, policy makers are attempting to lance the tumors by attacking them with prosecutions (not enough in my view) and new rules and regulations to curb “bad behavior.” Sometimes it works, at least for a while. Oftentimes, the treatment feels like toxic chemo to the many good and professional bankers in the world trying to make an honest living serving clients while navigating the well-intended morass of regulatory responses with all their unintended consequences. More often the tumor morphs, popping up someplace new in a slightly altered state, tricking us into thinking that yet a new fix is required rather than a fundamental system redesign. Just like the ideology of a cancer cell, our finance ideology undermines systemic health until the patient succumbs.

This is where we find ourselves, a decade since the 2008 financial crisis. We have allowed an ideology to take over our lives to such a degree that it is literally, albeit slowly and perhaps invisibly, killing us. And worse, the power we have ceded to the financiers in the process has done what power always does, it corrupts. Hedge fund managers can influence elections with the equivalent to them of what is a ten-dollar bill to the rest of us.¹³ Others hold up the Sovereign State of Argentina or the Commonwealth of Puerto Rico with strong-arm tactics and influence peddling that would make the Mafia blush. Citibank lobbyists apparently literally drafted key aspects of the derivatives legislation in Dodd-Frank.

With this corruption, and the grotesque compensation these masters of the financial universe now pay themselves (quite different than “earn”), the signal to the boys (they are mostly boys) on the trading floors is clear: Game on! Extract every dollar you can find, using whatever means you can, but of course don’t break any laws, and mostly, just don’t get caught. Worse, this environment attracts and rewards sociopaths at a rate that some research estimates is as high as ten times the national average,¹⁴ compounding the degenerative behavior and shifting the norms of what behavior is

13 See Ken Griffin, CEO of Citadel who feels the ultra wealthy “have an insufficient influence” in politics.

14 <https://hbr.org/2012/03/psychopaths-on-wall-street>

not only tolerated, but encouraged.

What we have on Wall Street today may seem orderly and refined on any given day, but underneath, when push comes to shove, it actually resembles a war zone. Concentrations of greed and unethical if not criminal behavior compound and accelerate the consequences of the bankrupt finance ideology that is eating up society and the biosphere at an accelerating rate.

Yet while unethical and criminal behavior on Wall Street may appear rampant to outside observers, it is in reality not the norm. On most days, the vast majority of financial activities conducted in the world are honest and lawful. It is instead the pervasive and flawed finance ideology that is the more insidious problem, reflecting not flawed character, but a confusion of means and ends. Through this confusion, finance ideology has displaced our broadly shared human values as the unifying belief system guiding society. It has infected our politics and law in the process, undermining their ability to defend life and liberty.

II. CONFUSION OF INVESTMENT WITH SPECULATION

“SPECULATORS MAY DO NO HARM AS BUBBLES ON A STEADY STREAM OF ENTERPRISE. BUT THE POSITION IS SERIOUS WHEN ENTERPRISE BECOMES THE BUBBLE ON A WHIRLPOOL OF SPECULATION. WHEN THE CAPITAL DEVELOPMENT OF A COUNTRY BECOMES A BY-PRODUCT OF THE ACTIVITIES OF A CASINO, THE JOB IS LIKELY TO BE ILL-DONE.”

— *John Maynard Keynes*



Over a period of decades coinciding with my professional lifetime, enabled by finance ideology, a revolution in distributed technology, and a massive influx of often-leveraged speculative capital into the markets,¹⁵ we have seen the speculation dominated global capital markets rise to a position of dominance in the global political economy.

The revered “market” has, to no small effect, displaced policy makers as a critical and often final arbiter of the contours of our political economy. It is not hyperbole when commentators refer to “bond vigilantes” who dictate monetary and fiscal policy limitations to government officials through their highly effective protest strategy of selling bonds, interest rates, which raises interest rates, thereby choking off the life blood of an economy. This response puts an effective curb on policies that the speculators consider posing a risk of inflation (even if democratically elected government officials deem that risk an appropriate tradeoff for other national goals such as full employment). We can see this reality when the Federal Reserve Chairman makes continuous reference to “market reactions” (both bond and equity markets) to contemplated policy changes. Central banks are now evaluated based on their communications abilities (with “the market”) as much as their monetary policy judgments given the need to telegraph such policy nuances well in advance so as not to “surprise the market.” While there is sound reasoning behind this fear given the current fragile state of financial market affairs, make no mistake: the tail is wagging the dog.

15 At a macro level, the exponential growth of financial capital over the last century is a testament to the “success” of our extractive, finance-driven capitalist system. You could say that we have converted natural resources, particularly our abundant reservoirs of fossil fuel, and the labor provided by a growing population entering the mainstream economy, quite efficiently, into financial capital. Yet it has come at the expense of the healthy and critical functioning of our ecological systems, and increasingly at the expense of a socially acceptable distribution of that wealth. So, in fact, the design deficiencies of our system have created the limitations of the system’s very ability to survive.

The root cause of this absurd and dangerous reality is clear but seems to go unnoticed by the popular mainstream pundits. Modern finance has cleverly and deceitfully erased the socially suspect word “speculation” from its lexicon and replaced it with the socially attractive word “investment.” Even the corporate raiders of the late 20th century have rebranded themselves as “activist investors.”¹⁶

In the process, we have lost the critical distinction in meaning between the two. The public, the media, and government officials have been tricked and seduced into becoming complicit in this deceit through the well-intended “democratization

MODERN FINANCE
HAS CLEVERLY AND
DECEITFULLY ERASED THE
SOCIALY SUSPECT WORD
“SPECULATION” FROM ITS
LEXICON AND REPLACED
IT WITH THE SOCIALY
ATTRACTIVE WORD
“INVESTMENT.”

of finance.” Aided by elegant academic theories, in particular the deeply flawed Modern Portfolio Theory (“MPT”),¹⁷ which was used to justify investment in risky stocks for pension funds back in the 1970s.

Over time, this long-term investment has morphed increasingly into short-term speculation. A reinforcing feedback loop ensues as change accelerates, information moves faster, and more money moves faster, chasing short-term tweaks to quarterly earnings expectations that may have little to do with long-term fundamentals. These rapid speculative flows of capital are in turn exaggerated

by the rise of momentum-driven computer trading strategies that accentuate the volatility. So even mild mannered mutual funds managing our retirement savings has been forced to shorten their investment horizon. We’re all speculators now! The experts can make the case that this is a rational evolution in response to ever-increasing change and the competitive dynamics of markets. But even if true, seemingly rational individual action is no guarantee for a socially desirable outcome for the system as a whole, as I will argue.

Recall one of our eight principles of regenerative economics is “in right relationship.” Losing the distinction between investment and financial speculation degrades the potential of a long-term relationship between owners and creditors on one hand, and enterprise on the other, to the level of an abstract transaction in pursuit of only short-term satisfaction. If this sounds similar to the distinction between love and sex, it’s

16 The corporate raiders of the 1980s and 90s have become today’s gentler but no less determined “activist investors” promoted by Wall Street as an attractive component of a diversified portfolio. It’s not coincidental that Wall Street makes money advising public corporations and their boards of directors virtually full time in anticipation of an activist showing up at their door.

17 See Appendix B for a discussion of the flaws of Modern Portfolio Theory and how it contributes to our reductionist and dangerous approach to thinking about “investment.”

because, well, maybe it is. The implications may be trivial when considered in isolation – one day trader, one billion-dollar hedge fund. But we must confront the systemic implications given the scale of this shift. Without a critical mass of investors in long-term relationship with large, multi-national organizations, who will accept the responsibility to govern when it's so much easier (and cheaper) to simply buy and sell?

WHO WILL ACCEPT THE
RESPONSIBILITY TO GOVERN
WHEN IT'S SO MUCH EASIER
(AND CHEAPER) TO SIMPLY
BUY AND SELL?

We've been encouraged to blur the distinction between speculation and investment by the ideologically captured economists and finance departments at our leading business schools (who typically sit unchallenged at the top of the food chain within these institutions), and by an easily manipulated and often conflicted media,¹⁸ corrupted political leaders, and even financial regulators who are often the products of the same confused ideology.

Today, even hedge fund managers doing high-frequency trading (average holding period measured in a fraction of a second, much of it nothing but computer-driven and stock-exchange-facilitated, unethical, if not illegal, front-running of other investors' order flow), are now glorified and legitimized as "investors" rather than shunned by society as parasitic, unethical speculators who systematically extract from the system. Their "investment strategies" are laid out in glossy power points by "wealth managers" in all the large Wall Street banks, no differently than any other investment strategy, with risk/return targets and correlation data to show a prospective investor how the fund fits into their diversified portfolio.

The story is the same for corporate raiders, now using the more genteel descriptor of "activist investors," who have amassed multi-billion-dollar pools of capital as they troll for short-term opportunities to extract financial value from business enterprises and even Nation States. In fairness, some of these opportunities arise from either poor management or even fraud, but they also include companies like Unilever, a leader in the transition to more sustainable business practices, a shift that requires a longer term time horizon than near-term quarterly earnings.¹⁹ Some of modern finance's billionaire "heroes" (with undue influence in our political system, including Robert Mercer, co-founder of algorithmic trader Renaissance Technologies, who was the

18 Not only has the media been seduced by the dominant narrative that has captured respected academics who are used as "objective sources." It also directly promotes the perpetuation of this false equivalency between speculating and investing, as it turns the latest news about the profitable business of speculation into an addictive 24-hour-a-day spectator sport, which is of course good for selling ads. For example, liberal leaning CNBC broadcasts "Fast Money" and their "trades of the day" throughout trading hours, and of course former hedge fund trader Jim Cramer's "Mad Money," also on CNBC, is broadcast after the market closes.

19 <http://capitalinstitute.org/blog/unilever-hell-no/>

money behind the Cambridge Analytica scandal, conspiring with Facebook to influence the U.S. elections)²⁰ have made their fortunes using these and other extractive means, enabled by an ideology that considers all speculation “investment,” even blatantly extractive speculation that harms the overall health of the system, and unnecessarily disrupts and even destroys the lives of employees and citizens of the speculators’ prey and their surrounding communities.

AT SCALE, SPECULATION
HAS BECOME VIOLENCE
SANCTIONED BY THE STATE.

Keynes was not the first to warn that when “capital deployment of a country becomes a by-product of the activities of a casino, the job is likely to be ill-done.” As Herman Daly has taught²¹, we can go back to Aristotle and the Greeks who had a different word not just for the distinction between investment and speculation, but for productive economic activity and the mere use of money to make money. The Greeks called the former “oikonomia”— the management of the household (“oikos” being the root of both economy and ecology), and the latter, “chrematistics”— the art of using money to make money.

I recall before the financial crisis reading Chapter 7 of Daly and Cobb’s critique of conventional economics, *For The Common Good*, as if it were yesterday. At scale, speculation has become violence sanctioned by the State. Like most people in finance (or in policy-making circles), I had never heard of the word “chrematistics,” which is no longer in use today. Yet the definition, “the use of money to make money,” accurately described what I did as a modern banker and “investor” who prided himself on his integrity. The realization hit me like a bolt of lightning to the solar plexus. Aristotle described the act of chrematistics as “unnatural,” meaning it did not accord with his philosophy of natural laws. How prescient he was. Similarly, it does not accord with our modern understanding of healthy living systems as we will see.

THE REALIZATION HIT ME
LIKE A BOLT OF LIGHTNING
TO THE SOLAR PLEXUS.

The principles of regenerative economics help us understand why speculation run amok — which accurately describes modern finance — is so pernicious. Central to the workings of regenerative economies, like all regenerative systems, is the primacy of cooperative, mutually enhancing relationships, in accordance with our principle “in right relationship.” In systems that survive over long periods of time, the parts are in mutually beneficial relationship with each other. That’s observed reality, empirically true, not just my opinion. It appears to be a good survival strategy for both the individual parts and the system as a whole.

20 <https://www.nytimes.com/2018/03/17/us/politics/cambridge-analytica-trump-campaign.html>

21 Daly, H., Cobb, J., *For the Common Good*, Chapter 7 (1994)

As a result of being in alignment with these universal living systems principles, the potential of wholes that are far greater than the sum of the parts is realized concretely in reality. This is true at the molecular level (one part oxygen, two parts hydrogen creates a compound water molecule holding the potential for all life), and at the living system level such as the human body and even the human being. I am “me” through the enormously complex, mutually supportive relationships between all of my cells to create vital organs and body parts, all working harmoniously with one another in subsystems, subsystems aligning to work as a body, and, I believe, the mysterious and magnificent connection between body, mind, and spirit that defines what it means to be human. And if that’s not amazing and magical enough, as doctors are now understanding, our bodies must be in a relationship of mutualism with the bacteria outside our bodies that reside in our guts, the “microbiome,” in order for us to both survive as well as thrive. So, our health, it would appear, is interconnected and interdependent with our environment, in a symbiotic, “win-win” relationship.

Relationships of mutualism extend to entire ecosystems, and even extend to the planetary level via the critical relationship between Earth and the Sun, which provides “just the right” amount of solar energy (heat and light) to support all life. Such relationships even extend all the way to our solar system’s place in the cosmos, according to those who study such matters.²² Relationships of mutualism, i.e., “win-win,” appear to be fundamental to all existence. That’s the universal pattern we now understand from both modern science (in contrast to the competitive finance ideology of “survival of the fittest,” a misconstrued understanding of so-called social-Darwinism)²³ and from our many wisdom traditions — Eastern, Western, and Indigenous.

Therefore, according to our theory, we can safely assert, *a breakdown in vital relationships of any living system is a root cause of, and will lead inevitably to, systemic decline and eventual collapse.*

It is not radical or controversial to assert that corporations have critical and mutualistic relationships as well: with their customers and suppliers; their management and employees; their communities and the environments in which they operate. Few would question the existence and importance of these relationships that must be mutually enhancing for the long-term health of the company, as well as the system within which a company operates. But what about the relationship between the owners of the business and the business itself? No capitalist could deny the prime importance of the relationship between owner and management in a private enterprise

22 Chaisson, E., *Cosmic Evolution: The Rise of Complexity in Nature* (2001)

23 Herbert Spencer not Charles Darwin coined the term “survival of the fittest.” When Darwin later used it, what he meant was the one that “fits best” into the system. Like the right piece of a puzzle that “fits best.” In other words, he used it to describe the overall cooperative nature of natural selection rather than a vicious competitive fight to the finish.

system. After all, it is the owner who bears ultimate responsibility for the business, unless we accept the idea that no one is responsible for the most powerful institution humanity has ever created. Unfortunately, this all too accurately describes the reality in the modern public corporation.²⁴

In a family-owned business, the relationship between owner and company is paramount and easily identifiable. Often the two are indistinguishable from each other, sometimes to a fault. The family business owner, by and large, takes pride in and responsibility for his or her company, often with their name on the door. Long-term planning and investment decisions come naturally. This provides no guarantee for success (or proper adaptation to the realities of climate change and other challenges), but the quarterly mindset is typically absent, making long term thinking

and decision making possible. Many such companies are quite successful — “sustainable” — often lasting generations and become sustainability pioneers within, or serving, old-line “dirty” industries like Norway’s 150-year-old DNV-GL, owned by a private foundation. Some, like Patagonia and Interface,²⁵ have become sustainability icons, even while their sustainability journeys remain incomplete.

WHAT’S UNIQUE (AND PROBLEMATIC) ABOUT THE MODERN PUBLIC CORPORATION IS THE LITERAL ABSENCE OF A TRULY MEANINGFUL AND DEDICATED LONG-TERM RELATIONSHIP BETWEEN THE OWNERS AND THE COMPANY.

Looked at through our regenerative lens, what’s unique (and problematic) about the modern public corporation is the literal absence of a truly meaningful and dedicated

long-term relationship between the owners and the company. This is not the company’s “fault.” Owners and enterprise have been systematically separated as a direct result of our broken financial ideology and a reductionist theory of investment – modern portfolio theory – which consciously or not controls the behavior of the vast majority of the trillions of dollars of investment capital flowing ever more quickly across the circuits of global capital markets.

But it gets worse. We must add the rise of index funds to the conversation. Institutional Investor reports that equity index funds have grown from 20 percent of the market a

24 Lynn Stout first introduced me to the reality that typical shareholders are not owners in any literal sense. Like creditors, they have certain contractual rights, but unless they gain 51% of the outstanding shares, there is little that represents genuine ownership in being a shareholder. See Stout, L. *Shareholder Value Myth: How Putting Shareholders First Harms Investors, Corporations, and the Public* (2012)

25 Patagonia is owned by founder Yvon Chouinard. Interface is a public company, but was controlled by its founder and CEO, the late Ray Anderson, who freely acknowledged that he could never have done what he did had he not controlled the Board. As an aside, since Anderson’s death, the company has pushed past his “climbing mount sustainability” metaphor, and now targets becoming a regenerative company.

decade ago to 45 percent at the end of 2017. The story behind this remarkable trend is quite nuanced. First, there is a growing recognition that most active fund managers don't significantly "beat the market" (using our narrow, single-purpose financial return, one-year lens to make such a judgment) and therefore don't justify their fees over the long run. Second is the rise in narrow, index, exchange-traded funds (ETFs), such as an ETF on the energy sector or banking sector, which are more liquid than individual stocks. As a result, they have become the speculators' vehicle of choice for so called "sector bets" and rotating out of and into sectors with the click of keyboard (or more likely now, with the automatic command of artificial intelligence).

What is important for our purposes is that nearly 50 percent of the "investors" (from mom and pop to sovereign wealth funds and pension funds) holding stocks in public companies literally are making their investment decisions without anyone analyzing individual businesses and their long-run prospects, much less engaging seriously in the responsibility of genuine ownership. And many more investment dollars invest via momentum funds that do technical market analysis looking at chart patterns but no fundamental investment analysis. In fact, they likely don't know or care what business the company is in. With a holding period measured in days, weeks or at most months, it's simply an abstract game of probabilities involving securities, nothing to do with company ownership. What's missing from the vast majority of investment capital, if we follow our principles, is long-term genuine owners who accept the responsibility of ownership, working in "right relationship" with companies they own the way a privately-owned business often (but not always) operate.²⁶

Compounding the challenge is the limited liability structure of public corporations, codifying the lack of ultimate responsibility of owners since they can only lose their investment and nothing more no matter how irresponsible the company behaves. And yet it is the long-term, real investments (clean, even regenerative factories or dirty sweat shops, coal mines or solar arrays) made by the world's largest corporations (and Government agencies) that are what really matter to society since these large capital investments will define the infrastructure of the economy of the future which will dominate its relative degree of sustainability. And most of these decisions are made without owner accountability for any long-term consequences! No wonder why business leaders feel trapped in the short-termism crisis of contemporary public corporations, unable to make the transition to a sustainable future many of these leaders understand must be done.

26 Private-equity-owned companies in theory can be managed for the long run, and some are. Some even work on business model transitions to become more sustainable. But the private equity industry has its own notorious extractive tendencies, so it is no panacea. Furthermore, with its exit-driven mentality required by the finite life of individual funds, private equity companies remain linked to the disease of public market short-termism even while operating as private companies.

Excess Speculation Is In Conflict with Regenerative Principles, and, Is Anti-Social

“IN FACT FINANCIAL MARKETS, WHEN LEFT TO FREE MARKET FORCES, CAN GENERATE ACTIVITY THAT IS PRIVATELY PROFITABLE BUT NOT SOCIALLY USEFUL. THERE CAN BE TOO MUCH FINANCE, TOO MUCH TRADING, AND TOO MUCH MARKET COMPLETION.”²⁷

- *Adair Turner, Former Chairman of the Financial Services Authority in Britain*

As we saw in our review of Adair Turner’s courageous book on fixing finance in Act I, Turner challenges many of the myths of finance ideology, such as the notion that just because it’s legal and profitable, it must be OK. Calling into question Wall Street’s self-proclaimed “financial innovations”—from the entire risk-management paradigm that ended up amplifying risk rather than managing risk, to the complex structured securities that enriched Wall Street while harming their customers—he concludes:

“The summary scorecard on three decades of financial innovation is thus almost entirely negative.”

Those are strong words coming from the former Chair of the United Kingdom’s Financial Services Authority. Turner is no pitchfork-wielding, Occupy Wall Street firebrand. He is pure establishment financial regulator and respected economist and intellectual. In his book’s epilogue he does not mince words: “We need a new approach to economics and to public policy.” Many outside the bubble of economics and finance would certainly agree, although they would also struggle to articulate where to look.

We offer here just such a new approach. The *regenerative systems framework* can serve as our theory to guide a fresh understanding of economic policy requirements. With it, a shockingly different conclusion than the conventional and failed narrative becomes impossible to avoid. Regenerative Economics takes us far beyond Turner’s response, which is an acknowledgment that there can and will be market failures as much as government failures, and that enlightened and courageous policy makers must often navigate between alternative dangers.

I would counter, however, that relying on the enlightened judgment of a few well intentioned, and even wise policy makers who too often remain hostage to their ideologically constrained and reductionist thinking, and at times seem to be making it up as they go along, cannot be the wisest course. In case one has any doubts, the

27 Turner, A., *Between Debt and the Devil: Money, Credit, and Fixing Global Finance* (2016)

entire untested, multi-trillion-dollar experiment with central bank quantitative easing that we have yet to unwind with numerous unintended consequences proves my point.

Thankfully, we do have a robust intellectual framework to rely upon: the regenerative systems framework of complexity science that governs all other complex living systems in the real world, or even perhaps in what Buckminster Fuller called the “Regenerative Universe.”²⁸

As we apply the regenerative principles of a healthy system to be our guide to finance and investing, let us be very concrete about what is essential (ie., real investment aligned with our principles), what is healthy and socially valuable (ie., responsible), and what must be curtailed (ie, real investment in conflict with our principles; extractive and predatory speculation, which is also in conflict with our principles; and excess speculation more generally).

The Case Against Excess Speculation

We have already discussed how finance ideology and modern capital markets have severed the relationship between investors and the public corporation. A healthy “win-win” relationship of mutualism becomes virtually impossible in such a context, in conflict with our regenerative principle, borrowed from the Quakers, “in right relationship.” Furthermore, most speculation is by definition a win-lose proposition, a zero-sum game fundamentally at odds with a win-win relationship.

Let me hasten to add, some active speculation does provide real and positive benefits to an efficient market. The price discovery function is enhanced by speculators who react quickly as the market digests new information, improving market efficiency in the process. Furthermore, speculators provide vital liquidity to all market professionals, allowing investors (and speculators) to enter and exit their positions dependably and at low transactions costs, at least in normal market conditions. For these reasons, some speculation incontrovertibly adds value to the system. The fair question is how much. We will return to this question below.

But what is also incontrovertible, is that the vast majority of speculation is essentially no more than financial bets based on perceived information advantages not shared with the other party in the exchange. Inevitably, one side wins and the other side loses (i.e., one side would have been better off not entering into the exchange at

28 Fuller, Buckminster, *Grunch of Giants* (1983)

that moment in time).²⁹

Up until now, we have had difficulty challenging the conventional “absolute truth” among finance academics and practitioners alike about capital markets and liquidity. We have been unable to articulate precisely why ever-increasing speculation is not beneficial as it seemingly enhances market liquidity, although this too is debatable. At worst, more speculation is considered within our flawed finance ideology to be merely neutral (providing no social benefits, but no clear harm either). However, when we view speculation through a regenerative lens, we can only conclude that the current state of affairs is in fact degenerative to overall systemic health, a conclusion aligned with our common sense. This conclusion applies when considering an individual bet in isolation, although it may not be material. But certainly, when we consider the aggregate fragility that excessive and seemingly ever-increasing and often leveraged and thus destabilizing speculation creates within the financial system, the situation is material. And when we consider objectively rather than ideologically³⁰ the value of incremental (and often fleeting when needed most) liquidity, our conclusion does not change.

FINANCE FOR A
REGENERATIVE WORLD
MEANS, FIRST AND
FOREMOST, THE CAPITAL
EXPENDITURE DECISIONS IN
THE REAL ECONOMY, NOT
THE FINANCIAL INVESTMENT
DECISIONS IN THE FINANCIAL
MARKETS.

Real Investment versus Financial Investment/Speculation

The first and most important point to make regarding our confusion of investment and speculation in the context of financing a regenerative economy is that we must place much more emphasis on the real investment decisions of the major actors in the economy: big business and State actors. Most of the “sustainable investment” conversation to date as well as energy and resources have been directed at financial investment, most notably the focus on ESG measures. Finance for a regenerative world means, first and foremost, the capital expenditure decisions in the real economy, not the financial investment decisions in the financial markets.

²⁹ In reality, speculation takes many forms, and it’s actually more complicated than a simple win-lose proposition. For example, one side could be selling to hedge another position and that net position generates a positive outcome even if the selling trade was a money loser. Nevertheless, my larger point remains valid. In speculative trading, the dominant ethos is hyper-competitive, winners and losers, rather than any sense of exchanges of mutual benefit like we see in living systems. Speculation therefore is, in the aggregate, not in alignment with the principle of “in right relationship” that defines healthy living systems.

³⁰ <http://capitalinstitute.org/blog/high-frequency-trading-blight-markets-tobin-tax-can-help/> and also http://capitalinstitute.org/wp-content/uploads/2014/09/Fullerton_Statement-on-Financial-Transactions-Tax-1.pdf

Our principle of “robust circulation” demands the reinvestment of surplus back into the system to enable it to thrive. Trading stocks on the secondary market is not reinvestment.³¹ In a very literal sense, a healthy living system must be understood as having metabolic properties, requiring healthy inputs (as well as the reuse or safe disposal of wastes). So, in accordance with our principles, healthy investment (inputs) and reinvestment (circulation) are essential to a regenerative economy just as clean water, healthy food, an education (inputs) and the circulation of oxygen are all essential to a healthy (regenerative) human being.

The investment the real economy requires is productive “real investment.” Traditionally, a productive real investment is defined as an investment that goes into building something new, replacing something worn out, or expanding an existing product or service, that creates value for society. In other words, we can point to the positive change (we will need to come back to this assumption momentarily) that results in the real world from the investment (unlike the trading of shares in the stock market which has no direct impact). There is a new building, an expanded research department in a drug discovery company, an addition put on a house. It is therefore both real and productive (recognizing that “productive” in our new understanding of regenerative economics must be revisited).

We can point to the win-win mutualism of the exchange with real investments. For example, if an investor invests in the construction of a factory (or a bridge or a building, or to fund the start-up costs of a new company), that’s a “real investment.” If the project is viable, the investor, the project sponsors, and the target customers “win,” as does society as a whole (again in a traditional undifferentiated growth based economic paradigm). Society “wins” because there are co-benefits beyond the individual participants of the project. Economists call these benefits “positive externalities.” There need not be a “loser” since the exchange is symbiotic, just like the exchange of oxygen between our lungs and our blood stream, yielding immense co-benefits to our being, including all the potential of life itself.

In the context of the sustainability challenges of the 21st century, however, we must go further and assess qualitatively the purpose of the new investment project. If it is a coal fired power plant, it is fundamentally different than if it is a solar farm for example. Yet both are “real” investments, in contrast to financial speculation with existing financial assets in the secondary financial markets (called “secondary” for a reason).

31 Preferential tax treatment on capital gains from trading securities in the secondary market with no link to real investment in the real economy based on the idea that it is intended to stimulate investment is absurd (despite some second order logic I will admit), but that’s a story for another day.

We must draw on our regenerative principle of “holistic wealth” as a new, and vital criteria for “productive investment.” If an investment goes into a start-up company

WE MUST DRAW ON OUR
REGENERATIVE PRINCIPLE OF
“HOLISTIC WEALTH” AS A NEW,
AND VITAL CRITERIA FOR
“PRODUCTIVE INVESTMENT.”

that doesn’t hire or respect minorities, does not pay a living wage or provide decent health care, or produces phone apps that may encourage violence in society or desensitizes our youth to pornography, even if it creates financial wealth for its investors and benefits for customers, we should not count it as “productive” investment although it is “real” investment. It is certainly not regenerative of social, ecological, and financial

wealth, “holistically understood” in accordance with our regenerative principles. But, it is *not* speculation either. It is real investment and it is what defines the quality of tomorrow’s economy; so it is critical.

Financial Investment and Speculation

In addition to the imperative to distinguish real investment from financial investment (or speculation) we must differentiate between responsible financial investment and extractive or simply destabilizing and thus systemically degenerative speculation, recognizing the large grey area in the middle. I will argue that financial markets over the past quarter century, enabled first and foremost by our flawed finance ideology that confuses means and ends as we have discussed, conveniently in partnership with mutually reinforcing advances in technology, have become characterized by a wholesale shift from primarily responsible financial investment to primarily speculation. The resulting “casino” has clearly led to negative impacts, beginning with the well understood “short-termism” problem of public companies. The results are likely to be catastrophic for society if we don’t change course.

A discussion of speculation, I must say up front, will be controversial for two reasons. First, there are legitimate grey areas, as in life. And second, some of what I am saying goes so against our conventional wisdom and finance ideology that it will elicit an immediate rebuke. I ask you to suspend judgment and wrestle with this line of thinking with me, in the common search for genuine solutions to a legitimate and self-evident problem, namely, that the financial markets have become largely an increasingly artificial-intelligence-driven, multi-trillion-dollar casino of short-term speculation, with feedback loops to the real economy that are out of anyone’s control, destructive,

and potentially lethal to society as we have learned more than once.³² But the punch line, as articulated in the preceding footnote, is that a healthy financial system would require we curtail current trading activity levels by more than 50 percent!³³ This would force dramatic shifts in human and financial capital deployed in finance, in my judgment, for the good of society. Naturally it would need to be implemented thoughtfully over time to mitigate the near-term social costs and regional economic dislocations of the disruption.

What I am *not saying*, to be clear, is that speculation is wrong, or all bad. I am a (modest) speculator myself. Many of my friends are speculators. As I said earlier, in a sense we are all speculators (to the extent we have savings in the speculative system). Even John Maynard Keynes was a speculator, while he understood the importance of keeping it in check. What I find “wrong” with the speculation in the system is that it is now on a scale that is (way) out of balance. And “In balance” is, not surprisingly, one of our principles of healthy, regenerative systems.

A HEALTHY FINANCIAL SYSTEM WOULD REQUIRE WE CURTAIL CURRENT TRADING ACTIVITY LEVELS BY MORE THAN 50 PERCENT!

The question of scale in economics and finance deserves special attention. Just as a puddle is different — not in degree but in kind — from a lake, scale makes all the difference when examining any economic activity and its impact on societal well-being.

32 As one way to gauge the speculative degree of capital markets, consider the US equity market. According to data compiled by the Securities Industry and Financial Markets Association, over the past five years, the average volume of capital raised in the equity markets, (i.e., the primary capital formation function of equity markets where the money raised is “real investment” into real businesses that use the money to grow), represented a mere 0.28% (about one quarter of 1 percent) of total equity trading volume. Remember our confusion of means and ends. The proper purpose of capital markets is the capital formation function essential to a free enterprise system. When capital formation represents a quarter of 1% of activity, and the New York Stock Exchange makes its money by selling data and direct computer access to high frequency traders, it’s clear that they are in the business of serving speculators as their primary purpose, or “end.” One can reasonably debate what the optimal secondary trading volume might be relative to new issue volume. But even if one were to assume that 99% of activity should be secondary trading to provide for liquid secondary markets in service to the capital formation function (the proper “end”), the excessive (speculative) trading is brought into stark relief. The implication is that a full seventy two percent ($1 - (100/362)$) of equity trading should be eliminated as anti-social activity! And the situation is far more extreme in the foreign exchange, government bond, and most of all, in the derivative markets, where the percentage of non-speculative, “real” hedging activity is certainly much lower than the share of capital formation in the equity markets.

33 We discuss policy solutions in Act IV, but as a hint, and as I have described in a past Future of Finance blog posts, a simple financial transactions tax could accomplish much the same goal, have minimal adverse consequences despite the howls of protest from the trading community and ideologically captured economists, and would of course raise significant revenues that we could debate how to use.

A day trader with \$100,000 speculating in his Schwab account from his attic is different in kind than a \$20 billion activist hedge fund manager (who might even be a sociopath) betting against the mortgage market,³⁴ or Argentina's sovereign debt, or seeking to demand Unilever scrap its commitment to sustainability to get a short-term bump in the stock price.³⁵ And financial markets with trillions of dollars of leveraged speculators are certainly different in kind than financial markets with old fashioned banks, mutual funds, and individual investors. So too, we need to confront the difficult reality that while the speculative behavior of one individual may be perfectly benign, ethical, and sometimes profitable, such behavior in aggregate may be anything but benign. As we know all too well, it is the nature of all complex systems, the financial system being no exception, to exhibit unanticipated and often unmanageable feedback loops.

No black line can be drawn between financial investment and speculation. Both involve buying existing assets, typically securities such as stocks and bonds, but also other assets such as commodities, farmland or developed real estate. But we can easily distinguish them from the real investment we described above, such as in a new factory or office building. These latter investments have direct impacts on the real economy and have real social and environmental consequences.

Constructive financial investment and destructive speculation exist on a spectrum. At one extreme is the proverbial Graham Dodd value investor³⁶ who seeks to invest in shares of a company with the belief that its future earnings will grow more than is reflected in the stock price, resulting in either a growing book value per share or growing dividends per share or both, and in either case a rising stock price as a result of that business performance. The investor has no intention of selling the stock provided the investment thesis and expected business outcomes remain intact. This is classic Warren Buffett style investing. Critically, the volume of trading activity for such a financial investor is extremely low since the holding period of the investment is measured in years if not decades.

To qualify as "responsible financial investment" we would add that the investor must assesses not only expected financial performance, but also the company's impact on society and the environment using an ESG or similar lens. If it is a large investor such as Warren Buffett's Berkshire Hathaway, then influence at the board level, either through outright control, or by assuming a board seat, or by engaging regularly with senior management on strategic issues, and not just at the annual meeting through proxy votes, demonstrates the responsibility that goes with ownership.

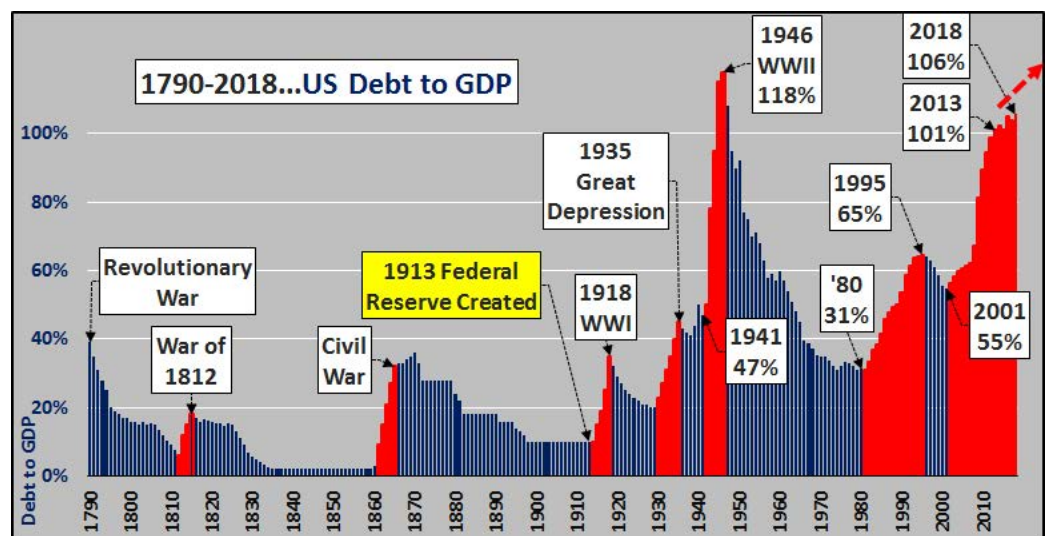
34 <http://capitalinstitute.org/blog/anyones-money-harvard-take/>

35 <http://capitalinstitute.org/blog/unilever-hell-no/>

36 <http://www.grahamanddoddsville.net/>

At the other end of the spectrum at the most extreme of extractive speculation, is the so-called “activist investor,”³⁷ previously known as a corporate raider, who preys on struggling or distressed (activists would say, and often fairly, ill-managed and under-valued) companies, or, distressed and over indebted countries. Worst of all, as we saw during the 2008 financial crisis, some speculators actually facilitated together with Wall Street the manufacture of securities custom designed to fail and then (secretly) bet against them on a massive scale to the extreme detriment of the market, which in turn transferred that catastrophe to society writ large. Global economies are still suffering the damage of the fraud-induced and speculator-inflamed mortgage crisis. Nation States remain over indebted in the wake of the Great Recession that resulted, and remain ill equipped to handle the next crisis when it inevitably arises. As a result in the United States and elsewhere, we have reached levels of debt relative to economic output not seen since the aftermath of WWII, as shown in FIGURE 2 below. It is inexcusable (and unnecessary) for a modern society to allow this situation to continue. The true cost of this gross malfeasance will only become apparent during the next crisis when our degrees of freedom to respond to it will be severely constrained, and more so in a country like Italy than in the United States.

Figure 2



37 In fairness, not all “activist investors” are predatory. Some are clever financiers who see companies being mismanaged from the perspective of maximizing near-term shareholder value. Their tactics may be aggressive and obnoxious, or benign and ethical, but their goal is to force a change whose sole purpose is to get the stock price to move with no value to society other than to make money for themselves and their investors. In isolation, and other values besides shareholder value ignored, this may be fine. But from a regenerative systems perspective, such a narrow focus on near-term shareholder value, coupled with the scale of this growing segment of the hedge fund industry, is a dangerous threat to society. It is creating mounting and relentless pressure on a business sector that should instead weight its business models toward long-term commitments and a values system beyond reductionist shareholder value. You could fairly say that while some activist investors are brazen, greedy sociopaths, most are distinct only because they amplify everything that is wrong with a short-term, shareholder- value-dominated finance ideology that is literally killing us, albeit slowly and mostly invisibly.

Moving back from that extreme, but still highly extractive and socially destructive, is the influx of certain high-frequency trading activities that now account for the majority of trading on the nation's stock exchanges, at times as high as 80 percent! This has driven the absurd growth of competing stock exchanges (now 13 in the United States), in the guise of so-called competitive markets. The heart of the matter is our confused notion that it is socially acceptable that extractive speculating become a legitimate "business," and that market liquidity should be an end in itself, whatever the collateral damage it causes. This is insane, unnecessary, and easily curbed, as we will discuss in Act IV.

The cumulative impact of excessive speculation, representing well over half of current capital market activity, is unacceptable extraction (theft). It is creating (perhaps unwittingly, but at times intentionally) unnecessary societal and environmental fragility at a time when we need to be rapidly enhancing the resiliency of both. It is amplifying the damage caused by the other flaws of our finance ideology, choking off market activities that would otherwise serve the transition to a healthier and more sustainable economy.

When we come to see excessive speculation as the health threatening disease that it is, the cure will be fought vigorously by the many powerful financial players who have been profiting so handsomely from the status quo. As I stated up front, getting to root causes will demand a "radical" (and sometimes threatening) rethinking of our worldviews and behaviors.

III. THE LIMITS OF MARKETS

The assumption that market solutions should have preeminence over a larger government role in the economy is central to the finance ideology and at the heart of the neoliberal economics paradigm. However, this simplified binary framing – either markets solve all problems best, or markets always require government intervention including a direct government role in certain circumstances to achieve fair and optimal outcomes – is a false choice.

Perfecting and Completing Markets

Markets are tools, confused for an organizing theory of political economy. They address certain problems very well, when they are well designed and fair. They best handle the efficient allocation of resources for the *wants* of an economy among participants of an economy who all have the means to choose their wants, and where there are few if any hidden costs — “externalities” — not reflected in market-determined prices.

Markets are not very effective tools in handling the needs of participants in an economy who lack the means to secure their needs, much less their wants. Of course, innovations such as low-cost technologies (and low-tech but high-relationship solutions) coupled with the drive and creativity of social entrepreneurs can mitigate this limitation by reaching “further down the pyramid,” empowering a greater participation among the resource-constrained in a market economy. But the basic structural limitation of markets as a tool remains. Unfortunately, it’s often easier to get excited about social entrepreneurs using market tools to solve problems, as we

should, than to deal head-on with the difficult reality that without a clear value system sitting above our finance ideology to guide us, and complementary public or philanthropic resource support, the market tool alone will fail to address critical challenges, much less make sustained change to system design failures.

The reasons become obvious when we look at the challenges through our regenerative lens. When we do, we can learn to see poverty not as a “problem to solve,” but rather, poverty can be seen and understood as the

absence of regenerative development. So-called “sustainable development,” to be effective and truly sustained, must be the result of the regenerative process, according to our premise. And that process can be described by universal living systems principles, each adapted to the relevant local cultural context. So, for example, to align with the principle of “robust circulation,” critical inputs to the system must be

MARKETS ARE TOOLS,
CONFUSED FOR AN
ORGANIZING THEORY OF
POLITICAL ECONOMY.

WE CAN LEARN TO SEE
POVERTY NOT AS A “PROBLEM
TO SOLVE,” BUT RATHER,
POVERTY CAN BE SEEN
AND UNDERSTOOD AS THE
ABSENCE OF REGENERATIVE
DEVELOPMENT.

assured, just as any living body needs food and water. Certainly a sick body can't be further malnourished or the outcome is certain. This means austerity in a country staggering from an economic shock (think Greece, the United Kingdom, or Italy in the aftermath of the financial crisis) is not a viable policy. The IMF (and the Germans) would do well to understand this living systems principle.³⁸

Furthermore, markets are also not well suited to very long time horizons where costs are difficult to internalize in market prices, either for technical or human behavior reasons, or where costs are really not costs that could be fixed with money, but "wrongs" that have no acceptable price. Modern society by and large accepts that murder and slavery are wrongs that can't be fixed with money. Similarly, the knowing destruction of access to clean water and an ability to provision oneself from the earth's natural bounty, and irreversible ecological damage like climate change or species extinction are examples of such "wrongs" for which there is no acceptable price, and therefore there is no market solution. Markets are simply the wrong tool, no matter how well designed. Yet markets have displaced our humanistic values that have stood the test of time as our guiding ethic.

If we need further evidence, there is what Jeremy Grantham refers to as "the tyranny of the discount rate,"³⁹ a number which, when plugged into a formula, decides that our grandchildren's lives have no value. (For example, a discount rate consistent with financial theory's time value of money and future uncertainty would discount the future costs of climate change back to almost nothing.) In summary, markets and finance together conspire to virtually ensure the destruction of life as we know it on this planet.

IN SUMMARY, MARKETS
AND FINANCE TOGETHER
CONSPIRE TO VIRTUALLY
ENSURE THE DESTRUCTION
OF LIFE AS WE KNOW IT ON
THIS PLANET.

This doesn't mean markets cannot play a role as part of an integrated solution. Carbon markets are a good case in point, particularly when applied where small marginal changes in cost make a big difference in decisions to switch technologies entirely (like from coal to wind, for example). But a carbon market without an explicit quantitative limit of acceptable greenhouse gases (effectively a quota – different tool) can never

38 Austerity programs promoted by the IMF and other multinational organizations, in alignment with the neoliberal belief system that the rights of creditors in debtor nations need to be honored or the debtor nation will lose access to the global capital markets, compounding the distress, are not trivial. But if our approach is to respect the patterns and principles of living, regenerative systems that sustain themselves over time, we need to rethink our whole approach to debt resolutions in stressed economies. This is a complicated topic, but any realistic solution must involve debt write-offs to reset economies, no different than the logic of the bankruptcy code that enables bankrupt companies to get a fresh start. Such an approach happens to also be aligned with the religious concept of a debt jubilee.

39 Grantham, Jeremy, "The Race of Our Lives Revisited" (2018)

be effective on its own. Ever-escalating carbon prices imposed collectively by governments could provide a de-facto quota, but this is not a market price in the conventional sense.

WE MUST NOT CONFUSE
THE NEED FOR BETTER
MARKETS WITH THE NEED
FOR A DIFFERENT, MORE
APPROPRIATE TOOL.

In each of these cases, market friendly economists refer to a “market failure,” and search for remedies such as a need for equal access to more transparent information. While we should always strive to enhance market effectiveness in this way, we must not confuse the need for better markets with the need for a different, more appropriate tool, using an overarching ethical lens to guide our

political economy in the selection of tools to address critical tasks. Eating soup with a fork, no matter how well constructed, will always disappoint in comparison with a spoon.

Case Study: ESG Investing

With this as context, let us now examine the central idea of mainstream “sustainable finance” – ESG investing. “ESG” stands for Environmental, Social, and Governance. The concept is that in order to understand a company’s long-term competitive prospects, an investor should study their environmental, social, and governance practices, not simply on ethical grounds — are they good corporate citizens — but as a key to future competitiveness and stock price performance. The term ESG investing was introduced by the UN Global Compact and made fashionable by Goldman Sachs over a decade ago as a sort of upgrade from the seemingly “soft” and morally grounded socially responsible investment (“SRI”) terminology that has been around for over a quarter of a century. Change comes slow to our finance ideology.

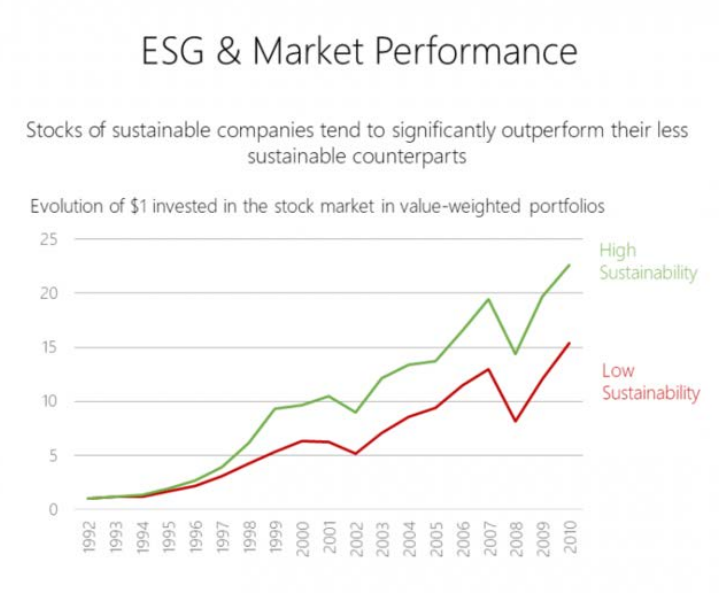


In 2006, the Principles of Responsible Investment (“PRI”) was founded as “the world’s leading proponent of responsible investment.” PRI defines responsible investment as *“an approach to investing that aims to incorporate environmental, social and governance (ESG) factors into investment decisions, to better manage risk and generate sustainable, long-term returns.”*

The PRI aims to mobilize asset owners and the global asset management industry to incorporate ESG into its investment practice in the belief that if investors demand transparency around ESG issues, the reporting of them will force management to manage them. Ten years on, the PRI has over 1700 signatories, representing an extraordinary \$62 trillion dollars of financial assets. Impressive as these figures are,

skeptics are right to point out that even though an asset owner or investment firm signs up for the PRI's six principles,⁴⁰ it doesn't necessarily follow that the portfolio managers actually change their investment practice to align fully with the principles. Furthermore, the principles are intentionally quite conceptual, making monitoring and enforcement virtually impossible. They are certainly not derived from an understanding of living systems. The PRI is best understood as a very positive statement of intention, but the short-term incentive system imbedded in the asset management industry remains the driving force for most investment practice.

ESG proponents have successfully demonstrated an underlying business case for business management to incorporate ESG factors into corporate decision-making because it enhances competitiveness, saves costs, and reduces risk. There is now a growing belief that ESG is simply a proxy for good management. Many academic studies have shown that companies with progressive ESG practices outperform their peers, such as this report by Robert Eccles and George Serafeim.⁴¹



And industry leaders like Generation Investment Management have now demonstrated superior investment performance over a ten-year timespan. So the integration of ESG measures—not simply running binary, ethical screens that may serve a different purpose such as avoiding “vice” stocks—is slowly but increasingly considered smart

40 <https://www.unpri.org/about>

41 Eccles, Robert, and George Serafeim. “The Impact of Corporate Sustainability on Organizational Process and Performance.” *Management Science* 60, no. 11 (2014)

financial investing within the mainstream.⁴²

My interest here is not to weigh in on this now decades-old debate about the validity, effectiveness, or distinctions-often-without-a-difference within this well-established and important field. *My purpose is to challenge an unquestioned but critical assumption.* Left unchallenged, I believe the entire theory of change underlying the move toward ESG transparency rests on a flawed foundation.

The theory of change goes like this: capital markets are more powerful than government policy makers. Only if “the invisible hand” of the marketplace has the necessary transparency (in this case ESG data), can it work its magic. So if investors demand this transparency, then and only then can the market perform its function of allocating capital “efficiently.” This translates into valuing “good ESG actors” at a premium and valuing the bad actors at a discount. This in turn will encourage “good ESG” behavior, by lowering the cost of capital for the “good actors” and thereby giving them a competitive advantage, which in turn will force all to adopt such “good” practices if they want to remain competitive. In the process, the market will magically address our social and environmental issues without the need for cumbersome government intervention via burdensome regulation.

Sounds wonderful in theory. But unfortunately, this theory is flawed. To be clear, it may well be true that companies that manage ESG issues better, all else equal, will “outperform” their peers (performance defined as financial return in the stock market, quite distinct from improving the well-being of humanity and the planet).

Thoughtful people can debate the reasons for that and we may never really know. And there is growing evidence that a focus on ESG enhances peer pressure, consumer pressure, and even the risk of losing a social license to operate, which collectively may have a positive impact on corporate decision-making.

But no one needs ESG disclosures to know that Exxon’s business (just to pick one) is bad for the planet, and that their sinister behavior funding climate risk denial

BUT NO ONE NEEDS ESG DISCLOSURES TO KNOW THAT EXXON’S BUSINESS (JUST TO PICK ONE) IS BAD FOR THE PLANET, AND THAT THEIR SINISTER BEHAVIOR FUNDING CLIMATE RISK DENIAL UNDER FORMER CEO LEE RAYMOND SHOULD BE SEEN NOW AS A CRIME AGAINST HUMANITY.

42 For a comprehensive review of conventional approaches to “responsible investment,” including more nuances than are covered in this paper, see <http://files.eric.ed.gov/fulltext/ED559300.pdf>, and to see how the mainstream financial firms market their approach, see Goldman Sachs ESG Report <http://www.goldmansachs.com/s/esg-report/index.html>

under former CEO Lee Raymond should be seen now as a crime against humanity.⁴³ And the rising ESG pressure on corporate behavior to the extent it exists, certainly doesn't suggest that capital markets, no matter how transparent, can solve social and ecological challenges on their own, nor even effectively lead the scale of urgent transformation we must undertake.

The tyranny of the discount rate, short-term incentives in financial markets, and the short-term characteristics of markets as tools, and most importantly, the fact that stock market performance does not equate with social progress, all conspire to limit what we can expect from markets in addressing our most pressing challenges. The needs of those without the means to participate in markets and the needs of non-human life forms, with which we are interconnected and interdependent, and indeed the need for functioning of vital ecosystems upon which all life depends, cannot be met by the financial markets. Investing with blind faith in a finance ideology that elevates markets as the best and only alternative to burdensome government regulation is in this context not only ignorant and dangerous, it is suicidal for our species.

Market Completion

Market completion is the idea that the more activity we can submit to the discipline and efficiency of financial markets, the more efficient capital allocation will be, and therefore the higher the growth rate of the economy. And as we have discussed, conventional economics is premised on the assumption that higher growth rates, regardless of the nature or quality of that growth, are the path to rising human prosperity.

Market completion is a term economists use among themselves largely to justify the financialization of our economy. It enabled economists to conclude that when companies move from being private family firms to public corporations, efficiency is enhanced and therefore "utility" increased. What exactly economists mean by "utility" is unstated, but it generally implies higher profits, rather than any other human value or purpose that we humans happen to care about. This same market completion theory helped economists (including former Federal Reserve Chairman Greenspan)

43 Raymond was CEO of Exxon from 1993 to 2005. At an oil industry conference in 1997, when Exxon clearly knew better as records now prove, Raymond referred to the "unproven theory" of climate change as "the issue that perhaps poses the greatest long-term threat to our industry." <https://climateinvestigations.org/climate-lawsuits-lee-raymond-tillerson/> Despite his deceit as well as his refusal to include LGBT rights in Exxon's anti-discrimination policies through his tenure at Exxon, he remains a so-called "pillar of the community" and a member of JPMorgan Chase's Board of Directors, a position he has held for decades. He is also a recipient of the Woodrow Wilson Award for "showing outstanding commitment to President Woodrow Wilson's dream of integrating politics, scholarship, and policy for the common good."

to justify the explosion of trading in derivatives, no matter how complex and arcane, no matter whether for legitimate hedging or irresponsible speculation. It justified endless parsing of cash flows into new securities so complex even the experts failed to understand the risks embedded in them. And it helped justify more and more human activities moving into a financial market paradigm, subject to the efficiency discipline of the invisible hand. Thus, when commodities became an “asset class,” traded by Wall Street and added to so-called well-balanced investment portfolios, economists cheered.⁴⁴ The fact that massive pools of speculative capital now manipulate the price of vital commodities, including food, in order to extract profits is apparently no cause for concern, since such “market completion” represents progress in the view of those who worship at the alter of the market.

IN FACT FINANCIAL MARKETS,
WHEN LEFT TO FREE-MARKET
FORCES, CAN GENERATE
ACTIVITY THAT IS PRIVATELY
PROFITABLE BUT NOT
SOCIALY USEFUL. THERE
CAN BE TOO MUCH FINANCE,
TOO MUCH TRADING,
AND TOO MUCH MARKET
COMPLETION.

It should give us pause that even a financial market professional like myself had never heard this term “market completion” until I read about it in the financial crisis post-mortems. This confirms for me the confusion of means and ends problem described above. Economists were inventing elaborate rationales to justify their neoliberal free-market worldview, confusing financial market completion as an end justifying what in hindsight were clearly absurd means.

Let us conclude this section by drawing again on the words of Adair Turner, who summed it up perfectly:

“In fact financial markets, when left to free-market forces, can generate activity that is privately profitable but not socially useful. There can be too much finance, too much trading, and too much market completion.”⁴⁵

When Markets Can be the Wrong Tool

Sometimes, markets are simply the wrong tool, but we try to use them out of our ideological belief that they are the only effective tool. Let’s remember the core assumption about markets again. Markets provide efficient price discovery that allows

44 Full disclosure: During the 1990s I managed JPMorgan’s global Commodities and Commodities Derivative business and pushed this thesis myself. I have since warned of the dangers of such an ignorant view with a piece titled “Commodities are Different in a Full World.” <http://capitalinstitute.org/blog/update-commodities-are-different-full-world/>

The topic has yet to get the attention it deserves and will become perhaps the most dangerous aspect of our finance ideology as the world, and particularly, Africa heads into a state of growing food scarcity as a result of climate change.

45 Turner, A. *Between Debt and the Devil*, p36

willing buyers and willing sellers to match supply with demand. If the price rises, it will trigger more supply automatically, solving the looming shortage without the need for a central planner. Or, if additional supply is not readily available, the price signal will trigger innovation, including the search for and creation of substitute goods. Alternatively, if prices sink too low, productive capacity will be eliminated, sometimes quite painfully, as markets contract. But again, the invisible hand is simply working its magic. All well and good so far.

What happens when society needs a good or service that no one has the capacity or incentive to pay for? National Defense is a classic example. Few would suggest we should allow the free market to decide how many nuclear subs we should have patrolling the coastlines. Wrong tool. Similarly, when we consider the needs, not wants, of those without resources to pay for the service in question, it requires only

elementary logic to understand that such needs will not be met by a market system alone. Of course we can and should innovate new approaches to bring the so-called “bottom of the pyramid” into the market economy.

80% OF THE GLOBAL
POPULATION LIVES ON LESS
THAN \$10 A DAY

But such an approach has limits, and we cannot avoid the clear moral choices we make in how we address the needs, not wants, of the vast population currently excluded from the market economy due to their lack of purchasing power. It is stunning to remember that according to World Bank statistics, 80% of the global population lives on less than \$10 a day (in purchasing power parity).⁴⁶ Ability to pay — whether for collective goods such as national defense, or for individual basic needs — is a prerequisite condition for markets to be a suitable tool. So we simply can’t avoid the complex moral questions surrounding the fine line between wants and needs of a society, and the tools we can use to address the legitimate needs.

Moral calamity becomes clear when we acknowledge that it is not countries causing our interconnected social and ecological crises. It is the 20% of the global population living above \$10 a day, and in reality it’s the top 10% of humanity that is responsible for the degradation of the environment that the other 90% depends on not for their luxurious desires, but for their survival. Bringing market solutions to the 80 or 90% while the same market system as currently designed is undermining the viability of life on the planet is the height of arrogance and ignorance.

BRINGING MARKET
SOLUTIONS TO THE 80
OR 90% WHILE THE
SAME MARKET SYSTEM AS
CURRENTLY DESIGNED
IS UNDERMINING THE
VIABILITY OF LIFE ON THE
PLANET IS THE HEIGHT
OF ARROGANCE AND
IGNORANCE.

46 <http://www.globalissues.org/article/26/poverty-facts-and-stats>

But our confusion about markets as tools is often more subtle than simply confusing wants and needs. Consider the American healthcare system. Somehow we struggle to understand that markets on their own are not the right tool. That statement does not make me a socialist. It's simply a realistic understanding of what markets are designed to do. Suppliers of any service naturally prefer the demand for their services to be higher rather than lower, and the profit motive gives them a powerful incentive to make it so. Advertising budgets are the obvious example of that incentive in action. But greater demand for healthcare services, all else equal, implies to no small degree not only more advanced treatment options, which is good, but also, a greater incidence of illness! Needless to say, there is a misalignment in interests between a pure market-based healthcare system and society's desire to be healthy. Healthcare service is complex, and it serves as a warning about the limitations of markets as simple tools.

Nor is a purely market-based insurance system a logical way to control or pay for the explosive costs of modern health care, unless a society is prepared to let people who can't afford insurance, or chose not to purchase insurance, get sick and ultimately die in the streets. A patient with a serious pre-existing condition requiring expensive treatments would not be able to buy insurance in a free market system, any more than you could buy fire insurance while your house is burning to the ground. The real choices a society must make about the complex healthcare needs of its citizens cannot be reduced to a simplistic debate between the efficacy of market-based solutions vs. government solutions. That's a false choice.

Upon closer examination, we will find that the market for many other seemingly simple goods turns out to be more complex than our friend the "invisible hand" is equipped to handle on its own. For example, in the housing market, greater demand is generally a sign of good things happening in society. Prices rise, which then triggers investment and thus new supply as theory would tell us. But at some point, issues like gentrification, rents rising out of reach for most people, traffic congestion, and overcrowded schools complicate the situation in ways that simple market tools cannot address. And depending on the quality and design principles of the new construction, it can have positive or negative impacts on the social and ecological health of the region (and the planet) that in the long run overwhelm the immediate positive impacts of growing demand.

Externalities

Finally let's consider the concept of "externalities" in the context of our discussion of the limitation of markets. Recall, an externality refers to the indirect effect on society caused by participants in a commercial enterprise or transaction, not captured by the price of that product. Externalities can be positive or negative.

If an individual renovates a dilapidated house and cleans up the yard, the whole neighborhood benefits, both in the quality of life and in their home values. On the other hand, if a factory emits toxins in the river, those downstream from it suffer a loss in both quality of life and likely in their real estate values that is not captured in the price of the goods manufactured in the factory.

The British economist Arthur Pigou proposed a tax on indirect affects where prices do not fully capture costs in order to “internalize externalities” into the price of a private transaction.⁴⁷ This is a clear and logical proposal (“Pigouvian taxes”) and one that economists debate with alternative modes of privately negotiated solutions not requiring government involvement. While I generally favor a broad shift toward Pigouvian taxes and away from an income tax for all but the highest income earners (tax “bads” like pollution and extreme inequality, not what we want such as broad based employment), I have a different point to raise here that relates to the limitation of markets as tools.

Pigouvian taxes can work well if structured appropriately in situations where there is a clear harm, and a clear solution with a known price to remedy the problem. If for example, the community outside a baseball stadium suffers from waste left on the streets after every baseball game, then logic would suggest that a tax be imposed on the baseball team to pay for the cleanup (or the baseball team owner agrees to provide for the cleanup on a directly negotiated basis, as some economists would prefer). In

this case, the harm is clear, the remedy is achievable, and the cost of the remedy is also easy to understand. There is a clear “market solution,” provided that the price of tickets “internalizes” the cost of this externality (waste clean up).

THERE IS A DIFFERENCE
BETWEEN A HARM THAT CAN
BE FIXED WITH MONEY, AND
A WRONG THAT MONEY
CANNOT FIX.

Unfortunately when it comes to many (if not most) “externalities,” the conditions above do not apply. The

harm may not be clear – consider the noise pollution of loud motorcycles rumbling through town, the light pollution of private security at an in-town warehouse, or “just a little pollution” in a stream, one more acre of rainforest cleared, or just a few more greenhouse gases released into the environment. Or, on the other hand, the solution may not be clear. And most critically, there may be no price that can rectify the “cost” of the externality.

My colleague Peter Brown (with a degree in philosophy) says it this way: “There is a difference between a harm that can be fixed with money, and a wrong that money cannot fix.” The implications for those of us who value the many positive attributes

47 Pigou, A. *The Economics of Welfare* (1920), MacMillan

of a market-based economic system are profound. Yes, use markets as tools where they are the right tool, and make the markets as fair and transparent as possible. But don't let our belief in markets over government solutions cloud our thinking and moral discernment. Just because one can buy insurance on a life, does not mean the life is worth only the cost of insurance. And exactly what is the "right price" for excess carbon emissions when even reduced carbon emissions, no matter the price, means destroying life as we know it on planet earth and a suicide pact for our own species?

The implications for climate change policy are clear: Yes, by all means we urgently need a "price on carbon" to help trigger the right market responses and drive our shift off fossil fuels. That said, we must be realistic about their effectiveness where demand is relatively inelastic, for example, demand for fuel when we are addicted to driving. Europeans and the Japanese already heavily tax petrol and it hasn't done much to curb driving. Good train systems are probably more effective, but certainly exist in both Europe and Japan already. Cap and trade (or cap and dividend) systems can also be useful tools to enhance the efficiency of this massive transition, if such a tool can be structured and governed effectively to mitigate extraction by speculators and fraudsters. But these so-called "market-based solutions" if they are to be effective, must in the end work like a very different tool: a quota. The "cap" part is the important part, and it needs to mean "cap." Only absolute limits on greenhouse gases (declining in absolute terms, not rate of growth from current levels) and hard limits on net carbon in the atmosphere can address the emissions aspect of climate change, leaving highly complex equity and distribution issues to contend with that markets don't solve.

BUT THESE SO-CALLED
"MARKET-BASED SOLUTIONS"
IF THEY ARE TO BE EFFECTIVE,
MUST IN THE END WORK
LIKE A VERY DIFFERENT TOOL:
A QUOTA.

Unfortunately, the quota tool has earned a bad reputation in the context of trade policy (quotas and tariffs, leading to trade wars). But in a world where our finite and non-substitutable resources are fast being degraded—the air we breath, local drinking water, the land and soil we depend on to produce the food we eat (now subject to nutrient depletion, desertification, and species loss), rain forests, and the vital ecosystem function of the water cycle—we would be wise to develop new and clearer thinking on the prudent application of quotas, and associated equitable distribution approaches.

The metaphorical "invisible hand" of markets that is so effective in certain but limited contexts will never understand that. We will need new tools, perhaps a "visible fist" for starters. But mostly, we need to restore a higher moral compass to our political economy than markets are capable of providing. And while higher prices in theory do trigger innovation for cheaper supply and or for new substitutes, the reality is often more complicated. That reality is unlikely to clarify itself and lead to impactful

behavior changes within the short window of time that the physical laws (not theories) of nature are now dictating to us. Certainly the current climate change crisis, what Sir Nicolas Stern described as “the biggest market failure the world has ever seen,”⁴⁸ makes this apparent.

Some things, like the price of our first drink of water a day, or the preservation of a functioning carbon cycle on our one and only planet, are literally priceless. When there is no price for something, a market by definition is the wrong tool.

Stranded Assets

Nowhere is the limitation of markets more apparent than when examining the issue of “stranded assets.” In 2011, the UK-based Carbon Tracker first popularized earlier research carried out by the Potsdam Institute with a report called “Unburnable Carbon: Are the World’s Financial Markets Carrying a Carbon Bubble?”⁴⁹ introducing the world to the concept of a “carbon bubble,” what environmental leader Bill McKibben would later call “global warming’s terrifying new math.”⁵⁰ The punch line was that if our goal is to keep temperature rise to under 2 degrees Celsius, then the world’s existing “proved reserves”⁵¹ of coal, oil, and gas is *five times greater than our collective “carbon budget”* – how much more fossil fuels we can burn in aggregate before making the 2 degree limit impossible.

That same reserve base is the very basis for the valuation of all fossil fuel companies in the stock market, and the source of future dividends that investors, large pension funds in particular, are expecting to receive. The Carbon Tracker report was focused on financial market risk of the carbon bubble, with the strategic intent of invoking a regulatory response. It worked (albeit slowly). It would take three years, but in a letter⁵² to Joan Walley, Member of Parliament and Chair of the Environmental Audit Committee on October 30, 2014, Bank of England Governor Mark Carney would be the first leading financial regulator to place stranded assets squarely on the agenda of financial regulators as part of a comprehensive approach to integrated reporting.

In response to Carney’s letter, Carbon Tracker CEO Anthony Hoble would say: “If

48 Stern Review on the Economics of Climate Change (2006): http://webarchive.nationalarchives.gov.uk/20080910155332/http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm

49 <http://www.carbontracker.org/report/carbon-bubble/>

50 <http://www.rollingstone.com/politics/news/global-warmings-terrifying-new-math-20120719>

51 “Proved reserves” is an accepted accounting classification that denotes the estimated reserve base that is economically recoverable and is therefore the basis of quantifying an oil company’s fossil fuel reserve base on its balance sheet.

52 <http://www.parliament.uk/documents/commons-committees/environmental-audit/Letter-from-Mark-Carney-on-Stranded-Assets.pdf>

markets are unable to look far enough ahead to see the compelling but often unheeded risks from climate change – regulators need to step up and intervene.”

The good news is that it appears that there is finally a growing consensus among financial system regulators that “stranded assets” is a concept worthy of their consideration. The bad news is that the Carbon Tracker report was based on the concept of a “carbon budget” (the quantity of carbon or greenhouse gas equivalents that remain to be burned globally if we are to stay below some warming threshold) that appeared in a peer reviewed report from the Potsdam Institute first published in *Nature* in 2009. So we are sitting here in 2019, a full decade since the science first illuminated the stunning reality that we need to leave the vast majority of already discovered fossil fuel reserves in the ground (with profound implications for the insanity of ongoing capital investment in the space). Nevertheless, it is fair to say that there has been little if any discounting of this risk in financial markets, and only scant evidence that fossil fuel companies have adjusted their strategies as evidenced by their still robust capital expenditures and talk of opening up new exploration frontiers in the Arctic.

And now the worst news, which comes in Part A and Part B.

First, Part A: Our \$20 Trillion Choice

The Carbon Tracker research was focused only on financial market risk. Therefore, it is focused on public company market valuation risk for investors. However, as I pointed out in “The Big Choice”⁵³ which I wrote in 2011, Carbon Tracker estimated that only 24 percent of global fossil fuel reserves were owned by publicly traded companies. This means that 76 percent of the true economic problem is sitting primarily on Sovereign State balance sheets. Think Petro States like Saudi Arabia, Iraq, and Venezuela, even Russia. Just because these assets don’t get repriced in real time on the stock market, does not shield them from real world economic loss.

IN 2011, I ESTIMATED THAT GLOBALLY, WE WERE LOOKING AT A WRITE OFF OF \$20 TRILLION OF REAL ASSETS AT A MINIMUM, OR FACE THE CATASTROPHIC CONSEQUENCES OF RUNAWAY CLIMATE CHANGE.

In 2011, I estimated that globally, we were looking at a write off of \$20 trillion of real assets⁵⁴ at a minimum, or face the catastrophic consequences of runaway climate change. The public market financial exposure to investors is relatively trivial by comparison.

53 <http://capitalinstitute.org/blog/big-choice-0/>

54 As a point of reference, since none of us understands what \$20 trillion write down means, it was estimated that the direct economic losses of bad sub-prime mortgage assets that triggered the 2008 financial crash were a “mere” \$2.7 trillion.

It is civilization's collective "big choice:" destroy the planet or face the unprecedented challenge of developing a compliance and perhaps compensation and economic redevelopment regime for leaving \$20 trillion dollars' worth of known fossil fuel resources in the ground. That challenge should worry all of us, including Mark Carney and his peers, yet no one has even begun to discuss it. Finally in 2018, Al Gore mentioned the issue with a reference to a \$25 trillion number in a public talk, so perhaps we are making progress. Yet market-based solutions remains the mainstream mantra.

Markets alone cannot deal with an issue like writing off \$25 trillion of real economic value without triggering failed states and the social upheaval that goes hand in hand.

Without unprecedented and difficult to imagine compliance and compensation arrangements, we will inevitably be dealing with either runaway climate change consequences (the current base case), or, in the event we manage to negotiate some form of global quota system, the need to fund offsetting compensation schemes and economic development and diversification programs or face the inevitable consequences of failed nation states in already volatile parts of the world. Watching the human disaster that has descended upon Venezuela in response to merely the collapse in oil prices of a Petro State (admittedly combined with grotesque corruption) is a harbinger of things to come.

The techno optimists will counter that the Stone Age didn't end because we ran out of stones. Technology costs for renewable energy and batteries are plummeting and will continue to do so, making renewables cheaper than fossil fuels. This is already happening, which is most promising. A shift in demand led by economics will make these potential "stranded assets" uneconomic, the argument goes.

My response is two-fold: First, we are late. Rational minds would demand that we would be reducing atmospheric greenhouse gases aggressively, now. Fires, floods, extreme hurricanes, droughts, heat waves, polar vortex chills are already wreaking havoc. A proper risk weighting (see Part B below) of adding *any more* carbon to the atmosphere would suggest we should be off fossil fuels by yesterday, so every year the transition takes has very real world costs in terms of ruined lives, property, money, and disruption to the earth's vital ecosystems as well as the economy. The scale and scope of this transition, and the many technical and environmental challenges we face (rare earth material for batteries and wind turbine blades for starters), is unprecedented, simply because of the scale, complexity, and energy intensity of the modern global economy supporting already 7.5 billion people and likely on our way to billions more. It is simply naïve to presume that this transition can happen smoothly through natural market forces.

And second, even if I am wrong, and the techno optimists have their day in the sun (my sincere hope), the world will still be left with a number of failed Petro States in

many of the most volatile parts of the world if those States do not begin immediately on an economic system transition that will not be easy to say the least, and will be impossible without massive external support when the fossil fuel cash flow stops. Where is there even a discussion about a plan for that eventuality? In the meantime, the average Venezuelan has lost ten pounds in the last year while the emigration crisis is only building steam. There is no easy and quick transition off oil for a Petro State, although Venezuela is an extreme case.

Now, Part B: The Reckless Probabilities

The original Potsdam Institute research that introduced the concept of a carbon budget used what should be seen as a terrifying assumption, perhaps in order to avoid having to report a much harsher reality that few would be able to process. The carbon budget

IT WOULD APPEAR THAT WE ARE MAKING THE EXACT SAME MISTAKE WITH OUR CONCEPT OF A CARBON BUDGET AS WE MADE WITH OUR COMPLACENCY REGARDING VALUE-AT-RISK ESTIMATES IN FINANCE!

concept is built on a probability assessment based on complex systems modeling. There is no concrete answer to how much additional greenhouse gases can be released before we pass the 2 degree warming threshold. But we certainly want to be “highly confident” and have a probability of success of, say, 99 percent (nothing is certain in complex systems) since the future of civilization is literally at stake. Surprisingly, the Potsdam carbon budget only assumes an 80 percent confidence interval. As a point of reference, the financial risk models that bred complacency leading to both the Long Term Capital

Management collapse in 1998, and the global financial meltdown in 2008 all presumed much higher confidence intervals than 80 percent (typically 95 or 99 percent). What all these probability-based models miss (and the modelers understand, but laymen often conveniently overlook) is the non-linearity of the risks involved.

It would appear that we are making the exact same mistake with our concept of a carbon budget as we made with our complacency regarding value-at-risk estimates in finance! But this time the consequences will likely be far greater than a Great Recession.

And, we actually need to target no more than 1.5 degrees, not 2 degrees which means we basically have NO CARBON BUDGET LEFT AT ALL if we were to calculate with even a 95 percent confidence interval, much less a 99 percent degree of confidence that would be rational given the stakes.

So in summary, we rest in our ignorant, ideologically grounded complacency that our free market system, which offers the best system we know to organize an economy, somehow can't contain within it flaws so large as to be the source of the system's (and our) downfall. This ideological belief persists despite the clear evidence that

the “market failure” of all time is staring us in the eye. And we aren’t yet really acknowledging the severity of the hole we are in.

As mentioned above, the two-degree threshold is now widely acknowledged by climate scientists to be too high: 1.5 degrees (350 parts per million) must be the real target – an enormous difference with respect to our remaining “carbon budget.” Furthermore, our probability-based approach to calculating our carbon budget is as flawed as the value-at-risk models that brought us a series of financial collapses in our complex financial system.⁵⁵ These past experiences with financial chaos should be our canary in the coal mine regarding our inability to forecast in complex systems.

WE SHOULD BE USING MUCH MORE CONSERVATIVE “EXTREME CASE” SCENARIOS FOR OUR CLIMATE CHANGE PLANNING, SIMILAR TO THE FEDERAL RESERVE’S “STRESS TEST” REGIME FOR BANKS.

We should be using much more conservative “extreme case” scenarios for our climate change planning, similar to the Federal Reserve’s “Stress Test” regime for banks. Doing so would certainly confirm that *we are out of “carbon budget” already.*

And finally, we have not even begun the conversation about how we are going to negotiate who leaves which fossil fuels in the ground outside of a market context, how we will enforce such an agreement, and who will pay how much compensation to Nation States (or private companies) to leave these reserves in the ground. Taken together, it’s all quite alarming and overwhelming to even think about. Calls for “transparency” and integrated reporting within corporate accounting are fine and necessary. But they hold within them the danger of a false security that such transparency is some kind of magic bullet, when the issues are far more profound, demanding a far more urgent response.

What we need is:

- An integrated understanding of atmospheric carbon cycle imbalances (carbon emissions and carbon sinks) and an action plan, based on verifiable research such as presented in Drawdown,⁵⁶ to aggressively reduce atmospheric greenhouse gases as fast as possible;
- A realistic geopolitical framework to deal with the economic and political ramifications of an unprecedented economic write-down of

⁵⁵ Climate modelers appear to be using confidence intervals that are far too low, as discussed. And the scientists warn of feedback loops and tipping points where rising temperatures could trigger reinforcing loops such as the melting of the permafrost, releasing untold volumes of methane. Yet such non-linear risks are exactly the stress test scenarios that should be guiding our policy response.

⁵⁶ Hawken, P. *Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming* (2017)

- our “stranded assets;”
- A more evolved economic development paradigm – Regenerative Economics ⁵⁷ – to guide the transition to truly sustainable and just economies, all unique to culture and place around the world, yet all in alignment with the universal principles that guide all healthy human and non-human systems, necessarily aligned with the laws of physics and our understanding of complexity science.

57 <http://capitalinstitute.org/wp-content/uploads/2015/04/2015-Regenerative-Capitalism-4-20-15-final.pdf>

IV. THE AGENCY PROBLEM OF MISALIGNED INCENTIVES

The Agency Problem, also known as the Principle-Agent Problem, is well documented in both popular and academic papers, so I do not plan to go into an exhaustive discussion here. At the heart of the Agency Problem are conflicts of interest.

For example, shareholders hire management to manage a corporation on their behalf, and their interests are often not aligned. Corporate managements may favor actions that enrich themselves in the short run, by deferring research investments to increase short-term earnings, or perhaps even by selling the company they manage and capturing their carefully negotiated golden parachutes, while harming the shareholders' long-term financial and non-financial interests. Or a private equity fund may extract fees from its portfolio companies to enrich itself when the impact harms its limited partners whose interest it is theoretically serving.

Finance is rife with conflicts of interest, and unfortunately, Wall Street has become brazen in exploiting them, extracting value from the system for selfish ends, rather than conducting activities that add value to the system. For example, the now infamous Abacus Trade, covered later in this paper, that cost Goldman Sachs a half billion dollars in penalties and fees imposed by the SEC was, at its core, an abuse of customer trust, exposing on a grand scale the exploitability of the conflict of interest between dealer and "customer" inherent in the securities business. The fact is, "customers" are really just counterparties in a rough and tumble game in which there is no duty of care to one's counterparty. And like any well-run casino, the house often sees more of the cards. That's the business model.

***Financius**, from the noun *finis* ("end") is the Latin Etymological origin of the modern English word **Finance**. It migrated from Latin to old French as **finauce** from **finer** ("to pay a ransom")*

This conflict of interest is not unique to the securities business. In the old days, "traders" or "merchants" were considered very low on the food chain in society because they were notorious for extracting value from society through dubious schemes (or outright theft) rather than contributing any real value. While that may be unfair, it is remarkable to consider how our modern culture now worships the trading class simply because they are wealthy. There is no qualitative or ethical lens applied to who gets picked for the Forbes 400. Money is the measure of success in our broken financial economy, and we are all now paying a price all our "success."

I will limit my comments on the Agency Problem to the conflict of interest issue that is structurally built into the securities underwriting and trading business, and at the root of much of the most Wall Street's egregious behavior. The conflicts between the advisory side of finance and the the securities side of the business can be equally

egregious, but that's a story for another day. We shall see that a reference to our same regenerative principles provides a useful roadmap to guide us as we consider an effective response.

In the old, trust-based ethical culture that defined JPMorgan during the 1980s and much of the 1990s, we used to say conflicts of interest cannot be avoided in finance. Instead, they must be managed. Doing so could only be accomplished by cultivating relationships of trust. When a bank is in "right relationship" (one of our principles) with its clients and with society, it operates in an environment of trust. Without trust, there is no accurate communication of information as the basis of commercial exchange, and there can be no healthy "right relationship." It's interesting to remember that this principle applies at all scales, from the healthy and accurate communication at a cellular level within our bodies, to the accurate and trusted communication of facts in the media to inform civil societies as we are learning. It is also true that the "right relationship" between the Earth and the distance to our Sun is the foundation of life and all the potential that has manifested since the Big Bang.

Unfortunately, modern Wall Street has lost society's trust, and has lost all credibility to manage these conflicts. Lacking that trust, we must design the financial sector accordingly, rather than pretend trust exists, or that we can impose codes of conduct onto a system that is not aligned with regenerative principles.⁵⁸

Indeed, while the literature on managing the Agency Problem talks in terms of incentives and codes of conduct, my belief is that while constructive, these measures are often band aids on a gushing wound. Wall Street has no one but its own lack of self-governance to blame. It's time to respond accordingly. The stakes are simply too high for the financial system, for the economy, and for society at large, as we have learned the hard way, to look for marginal solutions that are acceptable within our (failed) finance ideology paradigm.

The 2008 financial crisis began in the securities markets and then infected the banking sector because of Wall Street banks' deep involvement in the securities markets. In fact Wall Street banks, since the repeal in 1999 of the Glass-Steagall Act, had gradually transformed the lending market into a de-facto securities market with their "underwrite and distribute" business model for loans. This improved their short-term returns (and the bonus pool), but has had degenerative long-term consequences by accentuating the fragility of the system, a perfect example of misaligned incentives at systemic

58 Friends on Wall Street have told me that the compliance culture that now dominates banks has made them squeaky clean, and a demoralizing environment to work in, with "big brother" monitoring every call and email. Even if effective to deter and root out unethical behavior, such an environment is hardly conducive to a healthy financial industry in the long run.

scale.⁵⁹ So rather than lending to failing banks to save them in their traditional role as “lender of last resort,” central banks, led by the U.S Federal Reserve, primarily purchased securities in the marketplace (and directly from the most stressed banks) to protect bank balance sheets (and with them the entire system – mutual funds, hedge funds, insurance companies, pension plans, on down) that were sitting on securities that could no longer be sold in the marketplace as prices melted down. In a very literal sense, the central banks were transformed overnight from lenders of last resort, to securities dealers of last resort. Furthermore, to stave off panic, the central banks allowed (forced?) securities firms such as Goldman Sachs and Morgan Stanley to become legal “banks” virtually overnight, in order to have access to Federal Reserve liquidity, which in turn protected their creditors and shareholders from a “run on the bank.” This was like giving a reckless pyro free insurance after he sets his house on fire. *It was a de facto bailout of both Goldman Sachs and Morgan Stanley, albeit an indirect one, and one that got far too little scrutiny at the time or since.*

IN A VERY LITERAL SENSE,
THE CENTRAL BANKS WERE
TRANSFORMED OVERNIGHT
FROM LENDERS OF LAST
RESORT, TO SECURITIES
DEALERS OF LAST RESORT.

Looked at in its entirety, the Fed rewarded Wall Street banks for their high-risk trading activities (and fraudulent mortgage activities), and in the process, underwrote the life-changing compensation schemes awarded to traders and management, with an effective “put option” (to the Fed) that protected their downside when things went horribly wrong. The strategy was both unfair to the public and unwise as a regulatory response. It actually encourages the very reckless risk-taking central bankers and regulators have sought to curb. And Wall Street is very good at exploiting mispriced (or unpriced) options. That’s what they do!

How did we get here? Simple. Banks pushed hard to get into the securities business as we know, culminating in the repeal in the late 1990s of the Glass-Steagall Act, which had separated banking and securities firms. At the same time, the banks altered their traditional lending model to an underwrite-and-distribute model. Their reason? It was more profitable and mark-to-market accounting allowed all the profits to be recognized up front (upping and front-loading the bonus pool, and earnings per share

59 Defenders of the “underwrite and sell” business model will rightly point out that it reduces risk to the bank who sells down its exposure. This half-truth is an example of the dangers of finance’s reductionist thinking. That risk is simply pushed elsewhere in the system, and by having fewer stable and healthy lending relationships (“right relationship”) and more cyclical de-facto securities transactions (loans traded as securities is now common), the entire system becomes more fragile in the process. The logical alternative would be that perhaps that high risk loan (likely financing a leveraged buy-out which itself increases fragility in the economy) that was then “sold down” by the underwriting bank, should never have been made in the first place. The economy would likely have remained healthier and more resilient without the leverage buyout, but the banker bonus pool would suffer.

in the process).⁶⁰ Relying on our misguided finance ideology, bankers and their enablers in the academy justified Glass-Steagall's dismantling as a move toward a more efficient market, enabling entrepreneurs to innovate and take greater risk, banks

THE UNCHECKED RISE
OF CAPITAL MARKETS,
DISPLACING DIRECT,
RELATIONSHIP-BASED BANK
LENDING IN THE UNITED
STATES, AMPLIFIES THE
MISALIGNED INCENTIVES
AT A SYSTEMIC SCALE, AND
NOT SURPRISINGLY, IS IN
CONFLICT WITH VIRTUALLY
EVERY REGENERATIVE
PRINCIPLE

to deploy capital more efficiently while earning higher returns, and corporate and household borrowers to secure lower cost financing, all of which would be good for economic growth.⁶¹ This was the well-worn narrative of free market neo-liberalism. Everyone wins, right? Well, it turns out, wrong.

When viewed through the regenerative lens, the deficiencies of this narrative reveal themselves, only to be reinforced by the experience of 2008 (and the Long Term Capital Crisis a decade earlier, if only we were willing to see it for what it was). The regenerative lens, I remind you, allows us to rise above the ideological stalemate between free market conservatives and government-intervention-minded liberals. It requires us simply to

observe how complex systems work in the real world and let the chips fall where they may. The unchecked rise of capital markets, displacing direct, relationship-based bank lending in the United States, amplifies the misaligned incentives at a systemic scale, and not surprisingly, is in conflict with virtually every regenerative principle, as we will only touch on here.

Let's begin with the principle "In Right Relationship." Displacing a relationship lender with an underwritten securities placement severs one of the most critical business relationships of the real economy—the typically long-standing one between a creditor and client. This creditor relationship is fundamentally different than the relationship between a bond-holder and a bond issuer. The former is or can be a genuine, ongoing relationship of mutualism, the latter is more typically a temporary opportunistic transaction for both sides. And if business challenges arise, the company will likely find itself across the table from a vulture hedge fund (with incentives totally out of alignment) rather than its relationship banker. And good luck to the homeowner who needs to even identify the entity holding its securitized mortgage. It does not exist.

⁶⁰ In fairness, there are legitimate risk management benefits to mark-to-market accounting, but there are also systemic-risk-increasing and credit cycle amplifying consequences, a complex topic for another time and place.

⁶¹ Full disclosure: I supported this narrative as a banker working for JPMorgan at the time. Reflecting back on it today, what drove our thinking was that this very narrative rationalized our strong desire to get into the more profitable securities business that regulation had protected as a highly profitable monopoly for the investment banks before the much bigger commercial banks showed up.

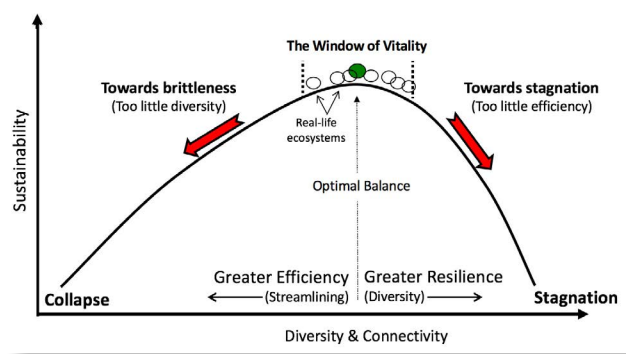
The shift to capital markets transactions of opportunism was driven by cost and profit (in violation of our principle of “Holistic Wealth,” but we won’t go there now. Instead, let us consider the principle “In Balance.”

Yes, bank lending is less profitable than securities underwriting can be (although generally less volatile if executed responsibly). As a result, commercial bank lenders make less money than deal makers and bond traders generally do. And it is true that corporations can save a few basis points, improving their short-term earnings per share, if they have access to the more “efficient” capital markets and the “creativity” of Wall Street. Furthermore, a corporate CFO may imagine there is more sex appeal in a large bond issue than a bank loan. Cuff links replace buttons.

But all of this efficiency and glamour comes at a cost: long-term resiliency, both for the individual firms and for the system as a whole. Recall General Electric having to be saved by the government during the financial crisis because it could not roll over its commercial paper securities in the market and did not have sufficient and resilient bank relationships in place to fund its working capital needs “the old-fashioned way.” That turned out not to be the end of GE’s troubles, a company that was known for a culture of financial opportunism first set in motion decades earlier by Jack Welch, worshipper and preacher of shareholder value maximization.

The principle “In Balance” tells us, among other things, that complex living systems that sustain themselves over long periods of time balance efficiency with resiliency. The diagram below is derived from empirical study of living systems. It is clear that the mindless pursuit of efficiency, without regard to the counter balancing force of resiliency at both the firm level and the system-wide level was in fact a root systemic cause of the financial crash. The system simply became too brittle (off to the left toward efficiency in the diagram) and collapsed. Too much resiliency without efficiency, on the other hand, leads to rigidity, stagnation, and therefore underdevelopment relative to potential.

FIGURE 3
Source: Ulanowicz, R,
Goerner, S., Lietaer, B.⁶²



And finally, let us touch briefly on the principles of “Robust Circulation,” “Empowered Participation,” and “Honors Community and Place.” The banking system is a circulatory system for money, the life-blood of a modern economy. Complex living

COMPLEX LIVING SYSTEMS
DESIGNED TO ENHANCE
CIRCULATION FOLLOW A
FRACTAL PATTERN.

systems designed to enhance circulation follow a fractal pattern. Consider the human cardiovascular system with two large arteries, many mid-size veins, and thousands of small capillaries, collectively designed to ensure circulation of blood, and with it oxygen, throughout the body. By design, the toes are empowered to participate in the circulation of oxygen to ensure both their own

vitality, and in exchange, they contribute to the mobility, balance, and therefore health of the entire body. In other words, they are empowered by the circulation of blood to participate in the health of the whole body. Without that circulation, not only do the feet suffer, but the entire health of the body is at risk, and critically, the body's overall potential is diminished.

By analogy, we want a banking system that ensures the “robust circulation” of money within communities. Today money center banks are increasingly extracting savings from communities and channeling those funds into unproductive financing of hedge fund speculators and leveraged buyout operators. That leaves fewer resources available for the “less profitable” business of local, small business lending, even though we understand that small business is vital to healthy economies and job creation. When local lending does take place, it is, whenever possible, commoditized and quickly securitized (because this is more profitable as we have discussed).

All these activities are clear violations of the principles of Robust Circulation and Honoring Community and Place. They leave communities disempowered to secure their vital financial interests. They consequently find themselves not only in a downward spiral, but less and less able to contribute to the health of the whole system (as they literally rot on the vine and become instead a burden to the system). Such a system, dominated by our short-term finance ideology, leads directly to the schism we now see in society, disastrous for communities, but also, and this is critical, disastrous for the so-called wealthy elites as well. It turns out the laws (not theories) of physics applies to economics. Quantum physics tells us that everything is literally connected to everything. Therefore, when one part of the system is compromised, the health of the entire system is compromised. Neither gated communities nor private jets can offer real long-term protection, and the potential for genuine prosperity is diminished. Which of course is what we experience in the real world today, both in developing countries but also in the so called “developed” western economies.

IT TURNS OUT THE LAWS
(NOT THEORIES) OF PHYSICS
APPLIES TO ECONOMICS.

We can reframe the conflict of interest Agency Problem that so much defines modern

Wall Street as a violation of the universal principles that define all real-world sustainable systems. In doing so, we can understand that we must address the problem

IT'S CLEAR WE SIMPLY NEED TO SHRINK THE SECURITIES BUSINESS BACK DOWN TO A SIZE THAT ADDS VALUE TO SOCIETY WITHOUT PUTTING THE HEALTH OF THE ENTIRE SYSTEM AT RISK

as if our lives depended upon it, in accordance with our premise that all sustainable systems in the real world honor these same patterns and principles. It's clear we simply need to shrink the securities business back down to a size that adds value to society without putting the health of the entire system at risk as is the case now. We need to restore balance. This requires political courage and will, but it is not complicated when we have clear living systems principles to guide us.

First, securities firms, with their endemic conflict of interest, should never be protected by the public sector "lender of last resort" access to liquidity of central banks. We have allowed the safety and soundness of the banking system, a well-founded public interest, to morph into the safety and soundness of the securities business, just because banks have been allowed into the securities business. I see no explicit public interest in the safety and soundness of the securities industry, provided there is a robust banking sector in service of the real economy, and provided that no securities company is allowed to be too big to fail. Only real banks that provide a public benefit should have access to central bank liquidity, and to deposit insurance and all other forms of public subsidy.⁶³ Of course, this privilege must come with responsibility and accountability, which tends not to be associated with business strategies aimed at amassing extreme wealth. Bankers (managers, lenders and processors, not traders or investment bankers) being paid millions of dollars a year tells you that the system design is flawed. Can we ask bankers to relinquish their roles as securities traders and to find value once again in being recognized for their vital public purpose within the financial system? As to securities traders, and investment bankers, let them do what they do, which can be done honorably and professionally (more likely out of private partnerships as we will discuss next), but let's keep their influence on the system in check. And certainly, let's keep them away from public subsidies and bailouts.

ONLY REAL BANKS THAT PROVIDE A PUBLIC BENEFIT SHOULD HAVE ACCESS TO CENTRAL BANK LIQUIDITY, AND TO DEPOSIT INSURANCE AND ALL OTHER FORMS OF PUBLIC SUBSIDY.

I believe we must go further. *We must challenge the notion that securities firms should benefit from the limited liability advantages of public corporations.* A strong case can

63 We don't even need to restore a "Glass-Steagall" like banking reform if we simply limit the type of banking activities that qualify for the public benefits of being a "bank." Let banks decide for themselves. But at the same time, we need to ensure non-banks don't pose a danger to society. This is a large discussion for another place.

be made that the best restraint on behavior within the highly conflicted and temptation-rich securities business is to return it to private partnerships as existed until fairly recently. Nothing addresses the Agency Problem of misaligned incentives like forcing partners to be owners, and to put only their own capital at risk rather than massively

GOLDMAN SACHS WAS
A MUCH BETTER PRIVATE
PARTNERSHIP THAN IT IS A
PUBLIC COMPANY.

leveraging other people's money in the asymmetric payoff scheme that exists today. Goldman Sachs was a much better private partnership than it is a public company. And with the highly regulated and subsidized banks out of the securities business, the level playing field is restored.

There is nothing inherently wrong with the securities business. But we must restore it to its proper place in service of the genuine needs of a healthy economy. In Europe, Japan, China, and many other countries, the banks play a far more important role than capital markets do in the economy. The United States stands alone in having a capital markets sector more powerful than the traditional banking sector. Considered more advanced by mainstream commentators, I would instead suggest this imbalance is a symptom of an unhealthy financial sector, out of alignment with regenerative principles, and captured by our flawed finance ideology.

These two structural shifts alone —separation of pure banking from securities underwriting while preserving the public subsidy and implicit support for only the banks (with requisite responsibilities that go hand in hand), and, eliminating the privilege of limited liability from securities firms — will certainly not solve all the problems of modern, extractive finance. But they address the worst of the conflicts of interest that define the Agency Problem of misaligned incentives, and are a precondition if we are to transform the financial system to be in service of a regenerative economy.

V. LIMITS TO INVESTMENT

“THE MORE SUCCESSFULLY A SOCIETY PUTS OFF ITS LIMITS THROUGH ECONOMIC AND TECHNOLOGICAL ADAPTATIONS, THE MORE LIKELY IT IS TO RUN INTO SEVERAL OF THEM AT THE SAME TIME..WHAT IT RUNS OUT OF IS THE ABILITY TO COPE.”

— Dennis Meadows, *Limits to Growth, Thirty Year Update*

There is perhaps no more challenging idea that I am wrestling with than the concept of “Limits to Investment.” I first published a paper on the topic in 2014 for TELLUS

IF WE ACCEPT THAT THERE ARE LIMITS TO GROWTH (AS WE WILL ARGUE HERE), THEN LOGIC WOULD IMPLY THERE MUST ALSO BE LIMITS TO INVESTMENT.

Institute’s Great Transition Initiative.⁶⁴ Simply put, if we accept that there are limits to growth (as we will argue here), then logic would imply there must also be limits to investment.

The debate over ecological limits began with the seminal book – *Limits to Growth* – commissioned by the Club of Rome and published in 1972. Its authors, Donella Meadows, Dennis Meadows, Jorgan Randers, and

William Behrens III, were all students of the famed systems science pioneer and father of System Dynamics, Jay Forrester at MIT. *Limits to Growth* was not a prediction, but a series of scenario analyses exploring the consequences of exponential population and economic growth within a world of finite resources.

The book sold over a million copies and generated immense controversy. Mainstream economists and businesspeople ridiculed it when it came out (and still do) as “neo-Malthusian” fear-mongering. Mistakenly, these critics confused its challenge of the core assumption at the heart of our understanding of human progress—that exponential growth as the basis of our expansionist economic paradigm and the source of our growing wealth and endless prosperity could continue forever— with a prediction of inevitable collapse.

Limits to Growth is instead an exploration of an important question and series of scenarios – some of which, if followed without humanity shifting course, would lead to economic and population collapse. An important independent study of the original report was undertaken by Dr. Graham Turner, a researcher at the University of

64 Fullerton, J. “Limits to Investment” Tellus Institute Great Transition Initiative, 2014 <http://www.greattransition.org/publication/limits-to-investment>

Melbourne in 2008 and then updated in 2014.⁶⁵ This study reveals that *Limits to Growth's* "business as usual" scenario (base case) tracks with remarkable accuracy the forty years of observed data since the study was first published. And right about now is the time when the growth curves begin to turn downward in that scenario, so we would do well to have a fresh look. *Limits to Growth* warned not of imminent collapse back in 1972, but that sometime in the next century, the mathematics of exponential growth on a finite planet would come into question and the complexity

LIMITS TO GROWTH WARNED NOT OF IMMINENT COLLAPSE BACK IN 1972, BUT THAT SOMETIME IN THE NEXT CENTURY, THE MATHEMATICS OF EXPONENTIAL GROWTH ON A FINITE PLANET WOULD COME INTO QUESTION

of the interconnected feedback loops is what the study most importantly revealed. The authors also warned of the potential dangers of climate change back in 1972. Had only all the critics been a bit less arrogant (and ignorant) and a bit more curious, our prospects could have looked very different.

My purpose here is not to debate the validity of *Limits to Growth*. I will simply assert that after considered study of the original thesis, the various critiques, and the scholarship of serious and fresh thinkers such as Kenneth

Boulding, Herman Daly, Peter Victor, Tim Jackson, Peter Brown, Robert Costanza, Paul Raskin, and many others, I find the prospect of exponential growth, in perpetuity, on a finite planet, to be simply preposterous. And that conclusion should be self-evident, especially once one accounts for what scientists call the "rebound effect," which will either partially or fully offset any material and energy efficiencies reaped from future, hoped-for technological fixes.⁶⁶ The rebound effect tells us that when we innovate energy and material efficiencies, we tend on average to either find new uses for the gains, or we invest the money saved in other "stuff" which itself has an energy/material footprint.

What I know as a financier, where the power of compound interest permeates all else, is that human beings, with our relatively short-term frame of reference, seem to be unable to fully grasp the overwhelming long-run implications of the exponential function.

HUMAN BEINGS, WITH OUR RELATIVELY SHORT-TERM FRAME OF REFERENCE, SEEM TO BE UNABLE TO FULLY GRASP THE OVERWHELMING LONG-RUN IMPLICATIONS OF THE EXPONENTIAL FUNCTION.

With the assertion that limits to growth do exist in a timeframe relevant to those of us living today, as well as all future generations, and that the quality (material/energy intensity) and distribution (among developing and developed economies) of growth

65 Turner, G. (2014) 'Is Global Collapse Imminent?', MSSI Research Paper No. 4, Melbourne Sustainable Society Institute, The University of Melbourne.

66 <https://www.theguardian.com/environment/blog/2011/feb/22/rebound-effect-climate-change>, and, http://environment.yale.edu/gillingham/GillinghamRapsonWagner_Rebound.pdf

have become the critical questions of the day, our purpose here is to consider the profound implications that such long-term limits have on the choices we make for real investment in the economy. Readers are reminded to recall the earlier distinction we discussed between real investment and financial investment/speculation.

Real Investment and Economic Growth

The economy, as measured by Gross National Product (GNP), includes consumption, investment, government spending, and net exports, often rendered as a simple equation:

$$\text{GNP} = C + I + G + \text{netX}$$

Concern for sustainability has typically focused on private sector consumption (“C”) since it represents the largest share of the economy (70 percent in the US, less in emerging economies like China and India). However, real capital investment (“I”) has a disproportionately large impact on the qualitative nature of an economy. Not only does the quality of the capital investment matter (green buildings or not for example), but because of the long-term implications it has on future consumption through

“technology lock-in” and the embedded feedback loops of business enterprise. For example, if an automobile company constructs a factory to build SUVs, then it follows that its advertising efforts will focus on increasing the demand for these SUVs.

CORPORATE REPORTING ON SOCIAL AND ENVIRONMENTAL PERFORMANCE, HOWEVER, TENDS TO FOCUS ON SUPPLY CHAIN IMPACTS RATHER THAN THE INITIATING IMPACT OF THE CAPITAL EXPENDITURES THAT CREATE THESE SUPPLY CHAINS.

The top 1,000 global corporations represent half of the total market value of the world’s 60,000 public companies, include most but not all of the largest business enterprises on the planet, and, undoubtedly, represent an even greater share of capital investment budgets.⁶⁷ What demands our priority attention, therefore, are the decades-long impacts of the capital expenditure decisions of these largest

corporations, together with the impacts of large government capital expenditures like investments in buildings and other infrastructure. For example, the decision to invest in building road systems rather than rail systems is of monumental importance. Corporate reporting on social and environmental performance, however, tends to focus on supply chain impacts rather than the initiating impact of the capital expenditures that create these supply chains. To take one of the world’s largest corporations as an example, Wal-Mart’s continued investment in new superstores matters much more than its subsequent efforts to green its supply chain, notwithstanding the importance of that work.

67 Robert G. Eccles and George Serafeim, “Top 1,000 Companies Wield Power Reserved for Nations,” *Bloomberg*, September 11, 2012, <http://www.bloomberg.com/news/2012-09-11/top-1-000-companies-wield-power-reserved-for-nations.html>.

Shareholder engagement that focuses on capital investment decisions, should it become a focus, will inevitably confront strong pushback rooted in concerns about long-term growth, competitiveness, and share price. Corporations generally make their investment decisions using a simple internal rate of return framework that compares a project's expected financial return with the firm's cost of capital. Because of the way finance discounts the future, corporations approve capital expenditures that achieve financial return targets with time horizons that rarely exceed ten years and typically ignore "externalities," including those with serious long-term risks. Concerns about the systemic impact on social and natural capital (outside the company's own profit-and-loss framework) rarely enter the analysis. Instead, these impacts are "managed" afterward, if at all. This short-termism is compounded by the even shorter-term horizon of financial investors and speculators preoccupied with quarterly earnings and higher valuations in the stock market, as we have discussed.

Policy responses, moreover, rarely occur until after enterprise investment decisions have already been made. A company is free to build a cigarette factory, and an entire industry, and only afterwards does society respond with labeling and advertising policies that, at best, partially mitigate the damage. Today, the unprecedented ecological risks we face make this reactive approach unacceptable. In fact, these investment decisions can be life threatening to our species as well as others. Many forward-thinking CEOs and policymakers fully understand this new reality yet feel powerless to address it.

From the Firm to the System

An adequate response to the challenge of a world at risk requires turning from the firm-level investment decisions to the economic system as a whole.⁶⁸ Along with genuine contributions to human progress, our economic system has produced staggering growth in financial wealth. Financial assets in the US have doubled as a percentage of GDP since 1980.⁶⁹ This should give us pause, rather than, as suggested in the McKinsey study, give us cause to celebrate without deeper consideration.

The drive for exponential returns on financial capital pushed finance to shorter-term and more speculative activity at the same time as physical resource limits to growth began to impose constraints. This has come at an alarming cost. Of the twenty largest

68 Although the focus of this discussion has been on large global firms that comprise the majority of corporate capital investment, nurturing decentralized, less capital intensive enterprises, and capital investments that are aligned with the demands of a regenerative economy will be essential in the transition to a regenerative economy.

69 Charles Roxburgh, et al. *Global Capital Markets: Entering a new era*. (New York: McKinsey Global Institute, 2009), http://www.mckinsey.com/insights/global_capital_markets/global_capital_markets_entering_a_new_era.

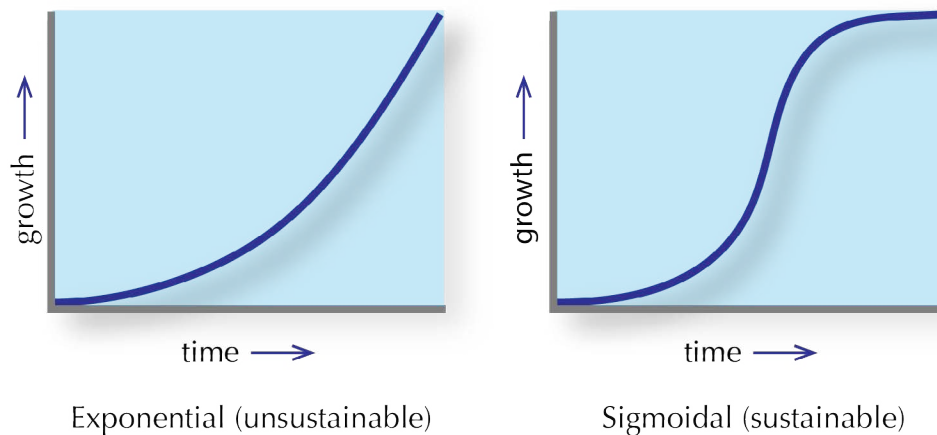
countries in the world, constituting nearly three-quarters of global GDP, all but Japan suffered per capita losses in their natural capital stocks between 1990 and 2008.⁷⁰ Although natural capital can be eroded for decades, we already appear to have passed safe limits, most notably the atmosphere's limit to absorb carbon waste.⁷¹

In the “full world” context in which we now find ourselves, quantitative limits to aggregate material growth logically imply limits to investment, since that real investment is what fuels the growth. Our challenge now is to determine where we invest, what we grow, and who gets to decide. Energy and material efficiency in the industrialized world and investments in support of healthy lives with dignity for the less developed economies are obvious top priorities. Investments in fossil-fuel-hogging luxury yachts and jets, and indoor skiing in the Dubai desert are not.

Continuing the pursuit of exponential growth of financial capital by drawing down both social and natural capital is unsustainable. Simple arithmetic demonstrates that it will eventually trigger some combination of financial, economic, social, political, or ecological collapse, likely all simultaneously. With the Great Recession as our wake-up call, we must transform our economic system design to shift the growth trajectory of financial capital to one that conforms more closely with that of natural systems—from an exponential growth curve to a more sustainable (sigmoidal) one.

CONTINUING THE PURSUIT OF EXPONENTIAL GROWTH OF FINANCIAL CAPITAL BY DRAWING DOWN BOTH SOCIAL AND NATURAL CAPITAL IS UNSUSTAINABLE.

Pathways for the Growth of Financial Capital



70 International Human Dimensions Programme on Global Environmental Change, *Inclusive Wealth Report: Measuring Progress Toward Sustainability* (Cambridge, UK: Cambridge University Press, 2012).

71 Johan Rockstrom, “A Safe Operating Space for Humanity,” *Nature* 461 (Sept 2009): 472-475; “World Footprint: Do We Fit on the Planet?” Global Footprint Network, last modified June 17, 2013, http://www.footprintnetwork.org/en/index.php/GFN/page/world_footprint.

Thriving individual enterprises—particularly the ones needed to drive the economic transition—can and will continue to grow and deliver exponential returns to investors, at least for a while. However, even accounting for known and unanticipated efficiency gains in the energy and material intensity of the economy, the aggregate stock of financial capital will need to pass through a critical inflection point to declining rates of growth.⁷² This transition of financial asset values and returns through the inflection point can occur through some combination of the following developments, many of which are already underway:

- a declining aggregate rate of return on invested capital;
- a systematic financial asset devaluation (or series of such devaluations);
- the debasing of currencies through inflation;⁷³
- defaults leading to voluntary or involuntary debt extinguishment;
- an unprecedented scale of private philanthropy to recycle financial capital back into social and natural capital in a targeted effective way;
- a large-scale voluntary or policy-induced reinvestment of profits by the corporate sector into natural and social capital; and
- an increase in taxation to allow the public sector to recycle financial capital back into natural and social capital in service of vital public security interests;
- the deployment of deficit spending and money creation (“qualitative easing”) by the world’s leading central banks to essentially monetize the creation and restoration of natural and social capital on a scale that returns balance between private financial capital versus other forms of capital.⁷⁴

WE CAN CHOOSE TO LEAD THIS TRANSITION TO REDUCED GROWTH IN THE STOCK OF FINANCIAL CAPITAL, WHILE AUGMENTING THE STOCKS OF SOCIAL AND NATURAL CAPITAL, OR RISK HAVING IT FORCED UPON US BY NATURE’S LIMITS, SOCIAL UPHEAVAL, OR—MOST LIKELY—BOTH AT THE SAME TIME.

72 Of course, the abstract sigmoidal curve in our diagram leaves key questions unanswered—what grows, what shrinks, what impact will technology have, who decides, how do we manage the adjustment, and so on.

73 The impact of currencies backing material-throughput-intense assets versus currencies backing regenerative real assets, such as mature forests, is a complex and important topic beyond the scope of this work.

74 This strategy requires an understanding of Modern Monetary Theory, to be discussed in Act III of this report. One desired consequence of it, if combined with wise fiscal policies, would be a crowding out of degenerative investment, and a crowding in of regenerative private investments in critical infrastructure in particular, on a scale measured in the trillions.

Financial Overshoot

The idea of limits to investment connects directly to an idea that demands our attention. What if financial asset values priced by capital markets are already “beyond the limits” of what is aligned with the reality of limits to growth. I suggest this is exactly the case. And it’s simple arithmetic.

Recall our earlier discussion of stranded assets—what some might call a “market failure” extraordinaire. The “invisible hand” directed the global economy to develop resources, in this case fossil fuel “reserves,” that now sit on company balance sheets and are the foundation of their total enterprise values, totaling in the trillions of dollars for just the public company (minority) share of the reserves, at the same time that it appears highly likely that if these fossil fuels are in fact burned in the business as usual case, then we are likely to destroy life as we know it on the planet.⁷⁵ In other words, the market (i.e., the stock and bond market values of companies’ securities, and the sovereign debt of Petro States) appears to ignore the possibility that some macro policy intervention will destroy the economic value of these reserves. I’m not sure I’d call that a “market failure.” Rather, I’d say the market has instead assessed the probability of policy action and concluded it’s unlikely in a timeframe that would compromise the assets. Unfortunately, starting with President Trump’s withdrawal from the Paris Climate Agreement, countries being off-track on their carbon-reduction commitments, and the reality that the Agreement doesn’t get us anywhere close to the 1.5 degree or lower limit that science deems essential, it’s hard to call this a “market failure.” You could more accurately say the market is predicting an outcome (based on our actions and complacency) that we don’t want to contemplate.

There are many other lurking “off balance sheet” liabilities we can expect soon to surface, which will negatively impact company valuations, although perhaps not as dramatically as assets that will need to be entirely written off. Consider the recent bankruptcy of Pacific Gas and Electric due to previously “off balance sheet,” but, it turns out, very real liabilities, triggered by the unprecedented California Fires.

In a future that is rapidly arriving in the C-suites of major businesses, companies will be forced either by their customers or regulators to “internalize” these externalities. In other words, they will need to begin to pay the full cost of production rather than dumping those costs onto society. When that future arrives, the first impact on company valuations will clearly be downward, before pressure spurs innovation.

The examples are endless, but let’s start with the most obvious area of climate change. A stiff carbon tax (let alone the imposition of a quota system, in other words, a cap with

⁷⁵ Breakthroughs in carbon sequestration potential on a scale beyond current expectations could alter this scenario.

“teeth”) would immediately translate into costs to many global supply chains, which would quickly erode profit margins and therefore company valuations. Similarly, a serious move to a living wage for all and access to healthcare (including part-time workers) would undoubtedly adversely impact the margins and valuations of companies like Wal-Mart that are currently dependent on low-skilled (and below-living-wage) labor.

There is another heretofore ignored risk that could potentially impact not only fossil-fuel assets, the worst polluting supply chains, and the most egregious social exploiters. This is a risk of a much larger order of magnitude that could impact *all financial assets*. Although difficult to quantify, it could easily imply financial assets are overvalued by half.

IT COULD EASILY IMPLY
FINANCIAL ASSETS ARE
OVERVALUED BY HALF.

I call this risk “financial overshoot.” I first wrote about it in 2012 after sharing it with the audience at a pension system conference. In truth, I’m not sure they grasped what I was saying, since the concept requires a willingness to abandon one’s cherished belief in the exponential growth forever worldview.⁷⁶ Here’s the basic idea:

Stock markets value businesses based on a number of assumptions about the future. First and foremost among them is an assumption around the expected growth rate of the entire economy. Recall what happens when some economic news changes our perception about future growth rates, for example, when the Fed raises interest rates thereby shrinking our growth expectations. Stock markets generally fall, while all else being equal, they generally rise in response to news of higher growth expectations, such as a reduction in interest rates (or a rise in consumer spending, or a tax cut that could lead to higher spending, etc.). Similarly, individual stocks respond to company-specific news that changes the market’s expectation about sales and earnings growth for that company. The growth rate is not the only factor that matters, but no one would suggest it is not a core driver of valuation.

Debt markets are a little trickier to assess, because rising growth can lead to rising inflation, which debt markets (especially long-term bond markets) abhor, all else equal. But if we look at the credit spread of countries or companies – the spread above the risk-free rate that the market requires to hold that incremental risk of default – then we see the same story playing out as with equity markets, particularly as the risk of

⁷⁶ A steady growth rate rather than a declining growth rate, no matter what that rate is, leads to the inevitable hockey-stick growth pattern of compounding growth that our common sense knows is ultimately unsustainable. But in our short-term orientation (whether quarters, or years), we fail to grasp the long-term (decades and generations) reality of the impossibility of exponential growth.

default becomes meaningful (higher risk borrowers). In these cases, a reduction of the market's future growth expectation translates into a reduction of future expected cash flow available to pay debt service, and a consequential drop in the value of the debt in the marketplace (and resulting rise in the credit spread the borrower needs to pay on incremental borrowing until at the extreme, the market will no longer lend to the borrower at any price). This is true with respect to government debt and private debt.

So in summary, it is incontrovertible that market values move in the same direction as changes in future growth rate expectations, and, growth rates provide a core assumption underlying aggregate equity and debt market valuations (in the case of debt markets, becoming more so as the underlying credit quality weakens and therefore the risk of default from reduced growth increases). So far, nothing controversial.

Now to the overshoot part, beginning with the necessary context. The Global Footprint Network explains that ecological overshoot⁷⁷ occurs when humanity's demand on nature exceeds the biosphere's supply or regenerative capacity. Draw-down of natural capital results, the equivalent of a savings account or an endowment dipping into principal to make an annual payout. With ongoing annual deficits and a resulting decline in the remaining residual stock of natural capital, the path to ecological

collapse is set, unless profound changes occur, just as surely as a saver will eventually run out of savings, slowly at first, and then suddenly, if he spends more than he earns each year.

IF EVERYONE ON THE PLANET
USED RESOURCES LIKE THE
AVERAGE AMERICAN, THE
GLOBAL ECONOMY WOULD
REQUIRE FIVE PLANET
EARTHS.

The Global Footprint Network calculates that our ecological footprint is now 1.7 times the earth's natural capacity to regenerate resources and absorb waste.⁷⁸ This is unsustainable. To make matters worse, if everyone on the planet used resources like the average American, the

global economy would require five planet earths. And of course, the lifestyle of the average American is what many in the developing economies aspire to, if not top 1 percent. That's the collective plan we are operating under. That's the (suicidal) goal of our system design! Our myopic state may allow us to remain blind, for some extended period at least, to the long-term implications of the trajectory we are on, but not indefinitely.

As Herman Daly and many others and the entire field of ecological economics have been telling us for decades our global economy has a profound scale problem. These demand limits or boundaries, not simply getting prices right. After all, as we discussed in the section on externalities, can there be a "right price" for destroying the planet?

77 <https://www.footprintnetwork.org/our-work/ecological-footprint/>

78 <https://www.footprintnetwork.org/category/press-releases/>

The exponential function embedded in compound interest, the foundation of finance, knows no limits. Financial capital, if we believe this, is literally unbounded.

But as we have explored earlier in this section, this assumption proves false if we take a long-term and holistic perspective. A reckoning awaits us. We must confront the urgent need to accept the irreconcilability of the exponential function with the increasing growth limits imposed by the physics of a finite planet. It is important to understand that even if one rejects this reality today, when the global economy doubles every quarter century at our target three-percent growth rate, it becomes impossibly difficult to deny this reality as we proceed up the exponential growth hockey stick.⁷⁹ This reconciliation will inevitably occur through a significant revaluation of financial assets downward to reflect the new reality, as we wrestle with how to cope with the limits to investment.

So, in summary, we have a compounding set of new realities to discount into financial asset valuations. These include: stranded assets, the off-balance sheet liabilities of heretofore unrecognized risks, and likely future policy- and society-imposed internalization of currently externalized costs. Finally, and inevitably, there will be the recognition that unending exponential growth, upon which most financial asset valuations are predicated, cannot continue indefinitely. I might add that the day of reckoning may come at a time of record inflated asset valuations thanks to unprecedented central bank support for financial assets and the peaking of the post 2008 cyclical economic expansion.

THIS RECONCILIATION
WILL INEVITABLY OCCUR
THROUGH A SIGNIFICANT
REVALUATION OF FINANCIAL
ASSETS DOWNWARD

In the real world, regenerative systems grow exponentially at first, then growth rates slow, and then eventually growth matures into non-physical development and higher levels of complexity. Just the way a human body matures.

If our economy is to transition to a regenerative one that can sustain itself for long periods of time it must evolve to follow a similar pattern. The present accelerating booms and busts, in my view, reflect the lurching symptoms of a transition to this new reality that is already underway. The day of reckoning still awaits when financial assets discount this new reality. It's arrival will trigger unprecedented economic and

⁷⁹ The technological optimists will say technology will save us. But the hard evidence is that what scientists have studied for centuries and term the “rebound effect” tends to use up throughput savings derived from more efficient technology by increasing demand for energy and materials, and by the sheer exponential force of a growing population seeking a higher and higher (and therefore more material) standard of living. For example, yes, the energy intensity of global GDP is falling, faster in the developed economies, but global energy demand continues to rise, as lower prices generate new demand, as needs expand into wants, as societies develop and naturally desire a higher standing of living, and as populations continue to grow.

social challenges. Our political leaders had better begin to give thought to how to manage the human hardship that such a reckoning implies. A finer future,⁸⁰ that is a more stable and humane future, is certainly possible. But it will undoubtedly have to navigate the shrinkage, perhaps by half over time, of the aggregate value of current financial assets, if we are to make the shift necessary to put us on a truly long term sustainable path.

We had better get our political economy in order. Time is short, and this is not a drill.

80 Lovins, H., Wallis, S., Wijkman, A., Fullerton, J., *A Finer Future: Creating an Economy in Service to Life* (2018)

VI. APPENDICES

- A. EIGHT PRINCIPLES OF REGENERATIVE ECONOMICS**
- B. FLAWED MODERN PORTFOLIO THEORY**
- C. ETHICS IN HIGH FINANCE**

APPENDIX A

Principles of A Regenerative Economy



Our regenerative story starts with a single core idea:

The universal patterns and principles the cosmos uses to build stable, healthy, and sustainable systems throughout the real world can and must be used as a model for economic-system design.

We then distill our research into key interconnected principles that underlie systemic health and collectively represent the eight principles of a Regenerative Economy :

- 1. In Right Relationship:** Humanity is an integral part of an interconnected web of life in which there is no real separation between “us” and “it.” The scale of the human economy matters in relation to the biosphere in which it is embedded. What is more, we are all connected to one another and to all locales of our global civilization. Damage to any part of that web ripples back to harm every other part as well.
- 2. Views Wealth Holistically:** True wealth is not merely money in the bank. It must be defined and managed in terms of the well-being of the whole, achieved through the harmonization of multiple kinds of wealth or capital, including social,

cultural, living, and experiential. It must also be defined by a broadly shared prosperity across all of these varied forms of capital. The whole is only as strong as the weakest link.

3. **Innovative, Adaptive, Responsive:** In a world in which change is both ever-present and accelerating, the qualities of innovation and adaptability are critical to health. It is this idea that Charles Darwin intended to convey in this often-misconstrued statement attributed to him: “In the struggle for survival, the fittest win out at the expense of their rivals.” What Darwin actually meant is that: the most “fit” is the one that fits best i.e., the one that is most adaptable to a changing environment.
4. **Empowered Participation:** In an interdependent system, fitness comes from contributing in some way to the health of the whole. The quality of empowered participation means that all parts must be “in relationship” with the larger whole in ways that not only empower them to negotiate for their own needs but also enable them to add their unique contribution towards the health and well-being of the larger wholes in which they are embedded.
5. **Honors Community and Place:** Each human community consists of a mosaic of peoples, traditions, beliefs, and institutions uniquely shaped by long-term pressures of geography, human history, culture, local environment, and changing human needs. Honoring this fact, a Regenerative Economy nurtures healthy and resilient communities and regions, each one uniquely informed by the essence of its individual history and place.
6. **Edge Effect Abundance:** Creativity and abundance flourish synergistically at the “edges” of systems, where the bonds holding the dominant pattern in place are weakest. For example, there is an abundance of interdependent life in salt marshes where a river meets the ocean. At those edges the opportunities for innovation and cross-fertilization are the greatest. Working collaboratively across edges – with ongoing learning and development sourced from the diversity that exists there – is transformative for both the communities where the exchanges are happening, and for the individuals involved.

7. **Robust Circulatory Flow:** Just as human health depends on the robust circulation of oxygen, nutrients, etc., so too does economic health depend on robust circulatory flows of money, information, resources, and goods and services to support exchange, flush toxins, and nourish every cell at every level of our human networks. The circulation of money and information and the efficient use and reuse of materials are particularly critical to individuals, businesses, and economies reaching their regenerative potential.

8. **Seeks Balance:** Being in balance is more than just a nice way to be; it is actually essential to systemic health. Like a unicycle rider, regenerative systems are always engaged in this delicate dance in search of balance. Achieving it requires that they harmonize multiple variables instead of optimizing single ones. A Regenerative Economy seeks to balance: efficiency and resilience; collaboration and competition; diversity and coherence; and small, medium, and large organizations and needs.

The resulting theory shows us how to build a vibrant, long-lived, regenerative economy and society using the same holistic principles of health found consistently across widely different types of systems throughout the cosmos. This theory grounds our understanding of why integrity, ethics, caring, and sharing lead to socially vibrant communities and healthy economies – while at the same time making perfect practical and scientific sense.

APPENDIX B

Flawed Modern Portfolio Theory

Modern Portfolio Theory (MPT) is ill equipped to serve as an investment framework for responsible finance in service of a regenerative world. Its definition of “risk” is reduced to the expected volatility of securities prices, nothing to do with material world risks such as climate change and social strife. The theory, in keeping with reductionist logic of modern economics and finance, presumes investment is disconnected from such real-world issues.

In fact, MPT is in reality a theory of speculation, and a deeply flawed one at that. Yet it provides the intellectual foundation underlying most financial capital flows in the global capital markets today.

Modern Portfolio Theory was first introduced in 1952 by Harry Markowitz. After the stock market crash of 1987 proved the theory’s simple yet fatal flaw, Markowitz was awarded the Sweden Central Bank Prize in Economics in Memory of Alfred Nobel (there is no “real” Nobel Prize in economics). The fatal flaw was the assumption that market prices were normally distributed (Gaussian), exhibiting the familiar bell-shaped curve. Of course, real world historical financial asset data is decidedly not Gaussian, with extreme events happening much more frequently than the bell shape curve would suggest. We call this “tail risk” in a “fat tail” distribution curve, the proverbial 100-year flood happening every 5 years or so. Markowitz knew this, and certainly never intended that his simplified abstraction, assuming normally distributed data to make the math in the model work, would become the blind basis (more often sub-consciously among sophisticated market participants perhaps than consciously) for the investment of literally trillions of dollars of financial capital.

MPT IS IN REALITY A THEORY
OF SPECULATION, AND A
DEEPLY FLAWED ONE AT THAT.

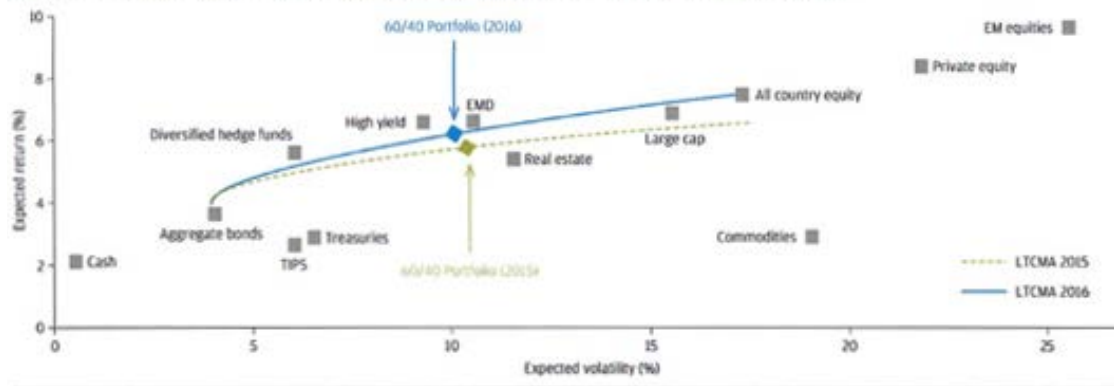
A second flaw of MPT is its dependence on backward looking data, and whether the available data is even statistically significant in the first place. In a world where change is the only constant, and, I would suggest, the future will be nothing like the past once we really hit the perfect storm of planetary boundaries and social unrest that will accompany this storm, reliance on steering through the rear-view mirror is reckless. Furthermore, lacking a viable alternative to MPT and its elegant if simplistic “efficient frontier” curve, practitioners have sought to extend the MPT framework to an ever-broader universe of “asset classes” like private equity, private real estate, hedge funds, and now even “impact investments” (which is most certainly not an “asset class”). That sufficient statistically significant data to apply the model is completely lacking does not stop Wall Street from pedaling the framework and use it to justify

fee generating transactions as this recent marketing document from JPMorgan Asset Management (\$1.7 Trillion assets under management) demonstrates.

Risk / Reward of the Efficient Frontier

Our 2016 vs. 2015 assumptions suggest that long-term investors willing to step out on the risk curve can expect to be better compensated for that incremental risk

EXHIBIT 4: EFFICIENT FRONTIERS AND 60/40 PORTFOLIOS, BASED ON 2016 VS. 2015 LTCMAS FOR RISK AND RETURN



The implication is as simple as it is terrifying: Most of the world's financial capital is being managed in accordance with a theory that is unfit for purpose.

APPENDIX C

ETHICS IN HIGH FINANCE

As I've argued above, the fatal flaws of finance stand on their own, independent of ethical considerations. However, since no critique of modern finance can be complete without a discussion of ethics, I've reserved that exploration for this Appendix.

I come to the topic as an outside observer with an insider's understanding. What I observed during the financial crash and its aftermath shook me to the core, and fundamentally changed my view on how aggressively we must respond. To cut to the chase, sometimes the toxins in the bathwater are so lethal, we need to sacrifice a few babies (figuratively speaking of course) and run a fresh tub.

First, let me begin by saying with great confidence that most people that work in the financial services industry are good, honest, hard-working people. Many are very smart, and consummate professionals.

Furthermore, the vast majority of people in the industry are in support roles, not direct revenue production, and therefore have limited financial incentive to cut corners or behave unethically. They do not work for elite hedge funds or "too big to fail" Wall Street banks, where individuals are often under extreme (and unhealthy) pressure to produce short-term financial performance under misguided incentive systems. The majority work for regional banks, local banks, insurance companies, mutual funds, specialty finance companies, and the like. It is unfortunate and unfair that these good people, including many highly ethical and highly compensated individuals working in high finance, have had their reputations have been sullied by the bad, and at times egregious behavior of a distinct minority.

My decision to leave Wall Street in 2001 was not triggered by some ethical revulsion as some have speculated or presumed. Actually, the most horrendous behaviors I will cover here all occurred after 2001—including those linked to the mortgage crisis, from Liar Loans to the Goldman Sachs/John Paulson Abacus Credit Default swap deal and



Bernard L. Madoff leaves US Federal Court after a hearing regarding his bail on January 14, 2009

Photo Credit: Timothy A. Clary—AFP/Getty Images

its many imitators. They also include the Madoff Ponzi Scheme; brazen individual and institutionalized insider trading (both those associated with convictions and failures to convict alike); the various LIBOR, FX, London Whale, Wrongful Foreclosure, Money Laundering, Fake Account Establishment, and False Selling scandals; and more.

This is not to suggest Wall Street was squeaky clean prior to 2001, far from it. But something shifted in the new millennium. The scope, scale, and shameless repetition of the scandals shifted by orders of magnitude into a depressing pattern, while the consequences of those scandals—particularly the ongoing damage done to real economies, real families, government finances, and societal trust in Wall Street—demands our urgent attention and honest assessment. That justice has failed miserably is but one obvious conclusion, as described chillingly in *The Chickenshit Club* by Jesse Eisinger.⁸¹ We should see this institutional failure with its cascading collateral impacts as a threat to civility itself.

While the majority work hard and behave honorably and ethically, they operate within a system that has lost its way thanks to the unethical and antisocial behavior and actions of a powerfully influential minority. Unfortunately, that behavior has set a dismal standard, just as a few high-profile dopers corrupted the standard for competitive cycling, creating pressure to cheat in order to compete. And high finance is nothing if not extremely competitive.

It is my view that the industry deserves severe censure for failing to police itself. This is true not only of its purely ethical failures, but the clear absence of basic human decency evident in certain highly competitive sectors of the business. The ongoing abusive treatment of young professionals and women in particular is immoral, unhealthy and dark. Wall Street understands better than outsiders that it is impossible to fully regulate behavior, and that regulations in the highly complex and dynamic financial markets by definition will create perhaps as many unintended consequences as desired behavior. Wall Street also fully understands the imperative that the financial system be trusted, from the level of trade settlement or individual credit decision, to the highest reputational level of the system itself. And

THE INDUSTRY DESERVES
SEVERE CENSURE FOR FAILING
TO POLICE ITSELF.

81 Eisenger, J. *The Chickenshit Club: Why the Justice Department Fails to Prosecute Executives 2017*

yet, a pervasive lack of statesmanship⁸² defines 21st century Wall Street leadership as much as its unethical behavior. *Wall Street "leaders" have failed to lead.*

Goldman Sachs and Abacus

Beyond the scandals of the Madoff debacle and the systematic insider trading schemes of Steven Cohen's SAC Capital,⁸³ the Goldman - Abacus synthetic mortgage trade executed with Paulson & Co. represents, in my view, the pinnacle of an era of deceitful, anti-social behavior. While it generated a lot of press and even a Congressional hearing, the brazen, truly sinister nature of this transaction has never been fully explained to the public. It is worth our effort to deconstruct it here, because it reveals the true character of a handful of Wall Street's leading actors, some of whom are still plying their trade, despite what should have been their public disgrace.

THE BRAZEN, TRULY
SINISTER NATURE OF THIS
TRANSACTION HAS NEVER
BEEN FULLY EXPLAINED TO
THE PUBLIC.

Constructed by Goldman Sachs with hedge fund manager Paulson & Co. the Abacus trade would net John Paulson personally a reported billion dollars or more. Stunning, and just wrong, it speaks for itself. Unfortunately, the damage done to society can never be measured since we'll never know precisely how much this one transaction (and the perhaps even more brazen copy-cats it inspired) contributed to the crash and the damage it did. But there is no doubt that the damage was severe and is ongoing.

It is not hyperbole to suggest that this one trade may have sealed the fate of Wall Street, and caused the collapse of Bear Stearns, Lehman Brothers, Merrill Lynch, and AIG, which in turn led to the ensuing global economic crisis. It is also not a stretch to

82 A financial statesman (or statesperson more accurately) is someone who understands that the financial system is integrally linked to the public sector and society more broadly, operates with implicit and explicit support of the public sector, and has in return a duty to put the well-being of society above personal interests. At times, this demands balancing the short-term interests of one's own firm with the long-term interests of the financial system and society more broadly. A financial statesman can honor his or her duty to shareholders, but not at the expense of the greater good of society. There is no room for opportunists and schemers, nor disingenuous self-serving platitudes around the table of financial statesmen. John Whitehead of Goldman Sachs and Dennis Weatherstone of JPMorgan were revered by colleagues and competitors alike: smart, tough, wise, and effective. They represent the last of a breed of financial statesmen, now all too absent from Wall Street.

83 SAC pleaded guilty to a series of crimes related to the insider trading scandal that caught up several of its senior traders, paying a record \$1.8 billion in fines and precluded from managing money for clients. Steven Cohen escaped personal prosecution, a comment on the inadequacy of our insider trading laws and who knows what other nefarious arrangements with those who could have taken him down. As the owner of SAC, however, the fine came out of his pocket. Cohen is back in business today managing his "family office," trading his own money.

suggest that its ripple effects contributed to the rise of populism on both the right and the left, delivering to us Trump and Brexit, and threats to democracy around the world.

Here's what I wrote about the transaction in my critique of John Paulson's record \$400 million donation to Harvard years later titled, "Is there Anyone's Money Harvard Would Not Take"⁸⁴:

The lives of millions of unsuspecting innocent citizens were harmed or wrecked — some by suicide — by the financial crisis, which was no doubt made more extreme by the fallout from this synthetic atom bomb inserted into the system. Indeed, the Abacus trade and a series of Magnetar trades executed by JPMorgan and others,⁸⁵ created leveraged and amplified losses on a (carefully selected) portfolio of bad loans, willfully, with great attention to detail. It is difficult to fathom the workings of a mind capable of first masterminding and then actually pulling the trigger on a deal like Abacus. Merely profiting from others' misery pales in comparison. These are harsh words. But the complexity of modern finance has shielded the public from seeing the full truth.

Lloyd Blankfein, CEO of Goldman Sachs at the time of the Abacus debacle, and colleagues from the firm would later testify in front of a joint subcommittee of Congress chaired by Senator Carl Levin on their role in the mortgage crisis. They specifically addressed the Abacus transaction and the SEC's allegations of securities fraud.⁸⁶ At the hearing, Blankfein and his underlings were defensive and defiant, even sarcastic.⁸⁷ Blankfein hid behind the disingenuous argument that Goldman was just accommodating customer desires: "We are the other side of what our clients want to do," said Blankfein. "The thing we are selling for them is supposed to give them the risk they want."

84 <http://capitalinstitute.org/blog/anyones-money-harvard-take/>

85 <https://www.propublica.org/article/the-magnetar-trade-how-one-hedge-fund-helped-keep-the-housing-bubble-going>

86 Goldman would later settle these charges for \$550 million, the largest penalty ever paid to the SEC by a Wall Street firm at the time. The firm made the following acknowledgement of its incomplete and therefore misleading disclosure (but without admitting or denying the allegations):

Goldman acknowledges that the marketing materials for the ABACUS 2007-AC1 transaction contained incomplete information. In particular, it was a mistake for the Goldman marketing materials to state that the reference portfolio was "selected by" ACA Management LLC without disclosing the role of Paulson & Co. Inc. in the portfolio selection process and that Paulson's economic interests were adverse to CDO investors. Goldman regrets that the marketing materials did not contain that disclosure.

87 When Levin asked Goldman's chief financial officer, David Viniar, how he felt when he learned that Goldman employees themselves described the terrible quality of the securities they were selling to their clients in internal emails using vulgar terms, he quipped, "I think that's very unfortunate to have on email."

The generic half-truth embedded in this statement was a considered decision not to acknowledge the true nature of the Abacus transaction, whose complexity and sinister design could only be appreciated by structured finance specialists on Wall Street and certainly went over the heads of the otherwise competent Levin subcommittee. As a result, the hearing, and presumably the SEC investigation, was limited to the more simple and straightforward questions of financial disclosure and conventional standards of customer care.

Abacus was cleverly designed by Goldman and Paulson to create for Paulson (and his imitators, which would include Goldman itself) an elegantly designed (cost efficient and risk mitigating for Paulson), massively leveraged bet (using the cynically customized internal cash flow waterfall formula design in the fine print of the securities' disclosure agreements, rather than borrowed funds) on the collapse of the most vulnerable, fraudulent securities comprised of the worst of the "liar loans" that had defined the sub-prime mortgage industry in the prior years. Goldman had all the data on these fraudulent and highly suspect loans. And they knew how to reverse engineer the rating agency models, so they could design a security that would appear (and be rated) "low risk" when in fact it would go from low risk to worthless with just a slight decline in the liar loan obligors' ability to pay. That was the sinister nature of it. It was not just crap. It was deceit, cleverly designed to appear low risk that would create a "brilliantly" engineered windfall for Paulson with relatively little at risk. It was pure, knowing, cleverly designed deceit. And I have little doubt that Blankfein, who came out of the markets side of the business, knew that he was making a false statement when he claimed under oath to be "selling for them (the customer) the risk they want" ("English" translation: "We were simply manufacturing and selling customized securities to our customers that delivered a risk and return profile they told us they wanted.")

No one wants to buy a bond that pays them a relatively low return typically associated with low risk (and importantly, low risk of total loss even if the underlying credit deteriorates), only to find out that they have been tricked into buying a security that was created out of thin air, intentionally designed for the sole purpose of allowing the (psychopath?) designing the security to take the other side of the lop-sided bet, and who would combine their sophisticated data advantages and intentionally devious financial engineering complexity to design that security to collapse instantaneously to worthless when the "liars loans" underlying the cash flows of the bond run into the first signs of trouble.

Of course Blankfein and his underlings would not explain it this way to Congress. They were under assault and rightly afraid for their wealth, for their firm's survival, and for their personal freedom.

But under oath they misled, they told half-truths. That is to say, they lied. Blankfein had a choice to make and he sided with deceit. In that fateful decision, he failed as a leader. He could have been fully transparent, acknowledging the true sinister nature of the transaction that could rightly be called “financial evil,” fired all those who conceived and oversaw the transaction, cooperated with the SEC, and set a course to root out the culture of the firm that enabled such a gross abuse of client trust (and now industry wide trust) in the first place.⁸⁸

BLANKFEIN HAD A CHOICE
TO MAKE AND HE SIDED
WITH DECEIT. IN THAT
FATEFUL DECISION, HE FAILED
AS A LEADER.

I have little doubt that’s what former Goldman CEO John Whitehead would have done, having known him and having shared communications with him about the fate of Wall Street and his old firm during the financial crisis. But that was a different time, and a different Goldman culture. Not surprisingly, no one on the Goldman Sachs Board saw it that way either. In fact, it’s likely few if any truly understood the true nature of Abacus, and the few that might have did not have the courage to confront Blankfein during the crisis. Governance failures of this magnitude unfortunately defined the unacceptable reality of too big and complex to fail or jail modern Wall Street during the crisis. Improvements have been made since then, but it’s impossible to know how effective they really are. The ongoing failings on Wall Street since the crisis are not a good sign.

Just as bad as Goldman’s failure to police itself, has been the failure of the industry to censure Goldman for its flagrant abuse of trust. As I stated up front, the business has become so complex and dynamic that it is unrealistic to expect regulators, the SEC, or even well-intentioned boards of directors to hold themselves to account. *The only effective enforcement mechanism of trust will come from the industry itself.*

Why would the industry ever police itself, one might ask? Simple. To save itself from itself. But alas, here Wall Street leadership again failed miserably, and is paying the consequences today, although not enough in my view.

Did JPMorgan CEO, Jamie Dimon, America’s most admired bank CEO, or even Warren Buffett ever speak out against Goldman’s devious Abacus transaction? Well as for Dimon, he couldn’t easily throw stones since his firm had been imitating the transaction with its own trades with hedge fund Magnitar (for which they too would pay large fines),⁸⁹ although JPMorgan was decidedly less clever than Goldman, apparently

⁸⁸ Blankfein’s failure to lead appears to have caught up with him as he has been implicated, fairly or not, in Goldman’s latest scandal in Malaysia.

https://www.rollingstone.com/politics/politics-news/1mdb_malaysia-goldman-sachs-criminal-charges-772795/

⁸⁹ <https://www.propublica.org/article/magnitar-deal-prompts-sec-settlement-with-jpmorgan-chase>

blowing itself up with mismanagement in the process if their account of events is accurate. One is left with a picture of the JPMorgan trading desk panicked about all the toxic waste on its bloated \$2 trillion balance sheet (the residue left after the bankers fled the scene with their bonuses), scrambling to create a highly leveraged (i.e., big bang for the buck) “hedge” to foist on “clients” via the Magnitar transactions since it could never sell all this reckless risk leftover from its own irresponsible underwriting activity of junk mortgages directly into the declining market. JPMorgan was never really held to public account for this because of the focus on Goldman’s Abacus deal, and because of all the other debacles happening at that time. Nor did Mr. Dimon explicitly acknowledge the depth of their deceit, despite his generally unique and honorable willingness to stand up and acknowledge mistakes.

I’m sorry. There is a profound difference in terms of the impacts on public trust between greedy (often clumsy) behavior (what we expect from Wall Street) and behavior grounded in willful sinister intent. No one ever owned up to the latter, and instead, all have hidden under the false pretense of “honest mistakes that we will ensure never happen again.”

J. P. Morgan, the man, testified in front of Congress in 1933 following the Great Crash and famously stated, “at all times, the idea of only doing first class business, and that in a first class way, has been before our minds.” He steadfastly declared in the face of great public outcry that the firm’s mistakes were “errors of judgment not errors of principle,” acknowledging mistakes made that led to the 1929 stock market crash and ushered in the Great Depression.⁹⁰ Was he in reality not much different than Lloyd Blankfein testifying in front of Levin’s subcommittee? I’d like to think not, but it would be foolish not to take a fresh look at history.

THIS INJUSTICE IS A TRAUMA-INDUCING OPEN WOUND.

What is clear, is that Goldman Sachs, John Paulson, JPMorgan, Merrill Lynch, AIG, Barclays, Lehman Brothers, and all the rest made gross and *trust-destroying errors of principle*. They never acknowledged it, instead suggesting they were errors of judgment. They were never truly held to account, even those in bankruptcy. This injustice is a trauma-inducing open wound. Like colonialism in its many forms, it will continue to infect and haunt society for decades to come.

90 When I worked at JPMorgan in the 1980s and 1990s, those words were considered gospel within the firm. We truly believed Morgan meant every word and they accurately represented the truth. It literally defined our culture. We scrutinized ourselves for any sign of errors of principle, the quickest and for a time only way to get fired. Now with some distance and historical perspective, I must wonder a bit. I’d like to continue to believe in the integrity of the man and the culture those words defined for so long. But history is written by the victors as we know. I suspect now that I would not have had much sympathy for old man Morgan in 1933. An important lesson in brand management and manipulation.

And what about the rest of the business community, many sophisticated enough to understand what was going on? Buffett by then was an investor in Goldman Sachs, having invested \$5 billion in Goldman Preferred Stock with warrants to buy Common Stock at the distressed price of \$115 per share right after Lehman failed. One could plausibly argue that Buffett rescued the firm from following down the path of Lehman's collapse by restoring confidence with a badly needed infusion of equity capital and not insignificantly, his reputation. So he would have been hard pressed to publicly call his agent Mr. Blankfein to account on Abacus. Where one stands given big enough stakes often depends upon where one sits.

And other business leaders too had an interest not to offend Goldman, given its power in the capital markets. Not one major company CEO criticized Goldman's brazen behavior publicly that I can recall, although many were doing so privately. In fact, a friend who worked in capital markets at a major Wall Street firm told me at the time that corporate clients were so keen to channel business into them and their competitors such as Goldman (to ensure their good standing in case they needed quick access to capital themselves) that the job was no longer challenging or interesting. In the aftermath of the crisis, he had become an order clerk, not a deal maker. This is oligopoly in action, and evidence of dangerous concentrations of power.

Notwithstanding Dimon's public statements that no firm should be "too big to fail", this "untouchable" quality is a different variant on the ongoing reality that our leading Wall Street firms indeed remain, as a practical matter, too big to fail or even censure. This poses an ongoing threat to the financial system, and by connection, a threat to the real economy and society as a whole. The experts can debate as long as they like whether the higher capital standards imposed on the banks, at least American banks, after the financial crisis make them resilient enough to withstand the next financial collapse. Maybe they do. What is incontrovertible, is the fact that no responsible financial regulator would ever allow a behemoth like the modern JPMorgan or Goldman Sachs to collapse for fear of the shock waves that would reverberate throughout the rest of the financial system, and by connection, the real economy. It simply will not happen.

NEITHER THE BUSH
ADMINISTRATION NOR THE
OBAMA ADMINISTRATION
WAS WILLING TO GIVE THE
BANKS A TASTE OF THEIR
OWN MEDICINE.

As an aside, I would in fact side with regulators in their decision to not let one of these firms fail. However, the remedy I would impose would cause painful dilution to shareholders, and would wipe out management entirely, unlike what the Fed imposed in 2008. This is what the bank consortium that took over Long Term Capital Management imposed on its partners with my full support in the takeover of that failed hedge fund in 1998.⁹¹ A shame for society

91 I was JPMorgan's representative on the Long Term Capital Management Oversight Committee that managed the rescue of that failed hedge fund in 1998.

that neither the Bush Administration nor the Obama Administration was willing to give the banks a taste of their own medicine.

Long after the collapse of the mortgage market, and the subsequent 2008 financial crash requiring unprecedented bailouts by governments and unorthodox and untested “quantitative easing” (printing money to buy bonds in order to artificially lower interest rates and in the process protect the balance sheets of the banks) measured in the trillions of dollars, reckless and criminal behavior by the banks brazenly continued, even before the ink on the bailout agreements had dried. Let us not forget the LIBOR scandals, the FX scandals, the money laundering for rogue States, the London Whale reckless fiasco that could have ended much worse, the robo-signing and fraudulent foreclosures including on our military professionals fighting overseas theoretically for the bankers’ own freedom, and then the fake accounts and on and on, to say nothing of the apparently legal but egregious fees banks now charge on credit cards, student loans, and even simple overdrafts. And we are not even discussing the piracy now practiced by some of the most brazen financial sharks in modern history dressed up as “activist investors.”

But it is the massive, complex, regulated banks that serve a vital public purpose, with public subsidy, that have truly failed us. They remain too big to fail and perhaps impossible to properly govern even with good intentions, either internally or by external regulators. Worse, their leadership has failed society by not exercising the responsibility of self-restraint and self-censure, but instead they hide behind self-serving platitudes like “mistakes were made, we must do better.” The personal stakes (\$20 million plus per year, private jets, access to heads of State, plus many other perks) may simply be too high to expect such financial statesmanship from modern financial leaders, given our very real human limitations.

And then there is the psychopath dimension.

Psychopaths Around Every Corner?

A psychopath is defined as a person who lacks all empathy for others, has a superficial charm, is cunning and manipulative, and fails to take responsibility for one’s actions. It’s important to understand that psychopaths need not be violent, certainly not physically violent. Significant research has been undertaken into the prevalence of such psychopaths in society. Most likely we all know such people. Of course there is a range of seeming psychopathic behavior in people at different times in different circumstances, but the research suggests a general conclusion that puts the population of psychopaths at one in a hundred.⁹² Interestingly and not surprisingly, studies have

92 <https://www.theatlantic.com/health/archive/2014/01/life-as-a-nonviolent-psychopath/282271/>

placed the population within finance at one in ten.⁹³ Of course there is a range of opinion on these statistics, and there is also degrees of psychopathic behavior.

I am not a psychologist. I can only speak from my decades of experience in finance, and my conclusions are not at all contentious in my mind. Rather, I believe these conclusions are self-evident.

Some context first is necessary. Psychopaths are often very smart. They are drawn to power. Money is power. Finance is about money. And finance rewards smarts, often extraordinarily. So it is completely logical that psychopaths that exist in society should be drawn disproportionately to finance. Especially big complex finance where the path to extreme wealth is matched or exceeded only by a few occupations such as technology company founders and rock stars. But unlike technology founders and rock stars, serious finance success and power (think hedge fund, venture capital, or private equity honcho, or major Wall Street bank CEO) does not rest on some inner creative talent and drive to express it (think Steve Jobs or Bruce Springsteen). It generally comes from some combination of hyper competitive drive, salesmanship, smarts, and an unusual attraction to, and ability to cope with, extreme risk. Note that in addition to superior intellect, risk taking and charisma are leading qualities of psychopaths. So it should come as no surprise that scientific studies suggest that there are ten times the prevalence of psychopaths in finance as there are in the population as a whole.

SCIENTIFIC STUDIES SUGGEST
THAT THERE ARE TEN
TIMES THE PREVALENCE OF
PSYCHOPATHS IN FINANCE
AS THERE ARE IN THE
POPULATION AS A WHOLE.

To my knowledge, there have been no studies of the more rarefied population of finance superstars, say those who have managed to accumulate \$100 million or more in finance (money is the measure in this business). I have no scientific basis for making this claim, but I suspect the percentage of such “superstar finance professionals” who rank high or extremely high on a psychopath scale would be decidedly north of the one in ten for finance overall.

The point is not the number or the percentage. And it’s not binary, either one is or is not a psychopath. The point is simple: there is, in my opinion, a clear correlation between great “success” (meaning in this instance, wealth accumulated) in finance and psychopathic tendencies. This is quite different than saying everyone at the top of finance is a psychopath, which I am decidedly not saying. Remember, psychopathic behavior exists on a spectrum, from Mother Theresa (absent) to Bernie Madoff (personified). John Paulson and the punk at Goldman Sachs who designed the Abacus trade with him are not Bernie Madoff. But their brazen behavior sure looks

psychopathic to me. And I've had a personal encounter with two clear (in hindsight) psychopaths in my finance career, both extremely "successful." As the experts will tell you, they are virtually impossible to detect in advance (charisma, intelligence). And, they are capable of brazen, seemingly inhuman, evil behavior. This was my experience. And when I shared my experiences with others in finance, no one was shocked. All had their own stories.

Which Wall Street titans are psychopaths today? I don't know. But statistically, it's safe to assume there are more than a few. And that is a dangerous place for them to be. Our response to Wall Street irresponsibility must be calibrated to this reality, not to the naïve but understandable assumption that Wall Street "leaders" think the same way we do, or their regulators do. The true psychopaths would never be regulators. Even the smartest and best regulators, with the best of intentions (I put Tim Geithner in this camp) will find themselves outmaneuvered and embarrassed by these predators.

These folks are different than you and me. The sooner we understand this, the wiser (and firmer) will be our response, and the safer will be our society, unfair as this may be to the many good and honest professionals in finance who will suffer the consequences for the reckless minority.