FINANCE FOR A REGENERATIVE WORLD

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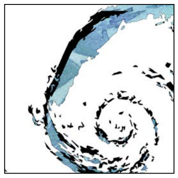
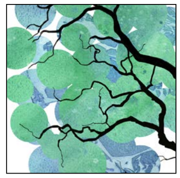
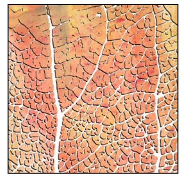
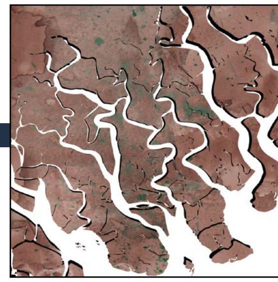
Act IV: Agenda for Genuine Financial Reform

Capital Institute

REGENERATIVE FINANCE IN 4 ACTS



Act IV: Agenda for Genuine Financial Reform

TRUE SYSTEMIC REFORM, IN WHICH SOCIETY WOULD QUESTION THE VERY PURPOSE OF FINANCE, AND THE DESIGN OF AN ECONOMY THAT IT WOULD SERVE, WAS NOT GOING TO HAPPEN IN THE WAKE OF SUCH A NEAR DEATH EXPERIENCE.

INTRODUCTION

Soon after the 2008 financial crash, my colleagues in the "new economy" space asked me to write a paper on the top ten priorities for financial reform. This topic would occupy an industry of regulators, bankers, lawyers, and lobbyists for years to come — but I tried nonetheless to get to the root causes of our unhealthy financial system. I responded with a clear ten-point plan. In my attempt to distill the complexity of finance and its pitfalls, a fork in the road emerged.

Addressing the egregious mistakes and misbehavior of the finance industry, operating within the existing neoliberal economics framework would be a monumental task in itself. Questioning that framework within the context of reform was another matter altogether. What we got following the financial crisis of financial reform was the former. True systemic reform, in which society would question the very purpose of finance, and the design of an economy that it would serve, was not going to happen in the wake of such a near death experience.

Of course, significant policy reform was enacted in the wake of the financial crisis — most notably the Dodd-Frank Wall Street Reform and Consumer Protection Act[1] passed by the United States Congress in 2010, and the Basel III reforms under the auspices of the Bank of International Settlements (BIS).[2] Many changes brought on by these reforms were well considered, effective, and productive. Enhanced capital requirements for banks and a special burden placed on systemically important banks were essential. I would have liked to see the burden placed on systemically important banks go further, to the point of causing them to shrink and simplify on their own. The Volker Rule — intended to prohibit banks from using FDIC insured deposits to speculate — proved difficult to implement, given the gray areas between legitimate market making and hedging activities, and outright speculation. The regulatory desire to have in place a workable "living will" to provide for the orderly liquidation of a large individual complex bank in the event of a crisis is understandable. But it probably remains a mirage.

1 https://www.dpc.senate.gov/pdf/wall_street_reform_summary.pdf
2 https://www.bis.org/bcbs/publ/d424_hlsummary.pdf

As anticipated, the regulatory responses also had adverse consequences. Responsible community banks now face undue capital impediments to do the good small business lending that a healthy economy needs. Large banks have been discouraged from doing the critical renewable energy project finance lending that is essential to the energy transition, due to the adverse regulatory capital treatment of holding such loans on bank balance sheets. Market participants note the adverse impact on liquidity in secondary markets due to the capital burden of holding inventories of securities, although I'm less concerned about this as it hurts massive speculators the most. Fewer and smaller speculators would actually improve systemic health, a target of my reform priorities as we will see.

The regulatory response to the financial crisis was designed to prevent what had just occurred from happening again. That, coupled with a staggering $321 billion in penalties and fines[3] imposed on the banks, would lead one to think that the banking industry has been humbled to a figment of its former self. One would be wrong.

The biggest banks are much bigger, and power is even more concentrated than before the financial crisis. The new and expensive to operationalize regulatory burdens ironically create enormous economies of scale benefitting the very biggest too big to fail banks, just the opposite of what we should be wanting. And while there has been a lot of effort invested in reforming the culture of finance, the evidence of real change is a mixed bag at best.

The ongoing and little discussed "ex-cum" trading scandal — what some are calling "the robbery of the century" — is breathtaking in both scale and brazenness, particularly in the aftermath of the financial crisis. As hard is it to comprehend, an estimated $60 Billion has been siphoned off public treasuries through a series of complex dividend withholding reimbursement transactions. National Treasuries were apparently tricked into issuing two credits for every eligible transaction in a scheme that lawyers may argue is technically legal (unclear), but clearly violates even the minimum standard of ethical behavior. The benefit accrues to a group of investors consisting of both wealthy individuals and pension funds, with a generous cut going to traders and their lawyers who were recruited to bless the transactions. Sadly, but not surprisingly, many of the world's leading banks are implicated.[4]

This has been the story of the conventional response to the financial crisis. Genuine incremental progress in terms of regulatory reform, accompanied by unintended consequences, and the reality that at the end of the day, not much has really changed. The banks are better capitalized, but the culture has not been changed. And critically,

3 http://image-src.bcg.com/BCG_COM/BCG-Staying-the-Course-in-Banking-Mar-2017_tcm9-146794.pdf

4 https://www.dacbeachcroft.com/es/articles/2017/february/cum-ex-trading-scandal-in-germany-a-huge-challenge-for-financial-institutions-and-the-insurance-industry/

little has been done to even question, much less address the deeper structural challenges of finance which is the basis of this booklet.

So we must forge ahead down this second path, a path that starts with a question rather than a series of problems to address with incremental fixes. That question is:

What would a financial system need to look like to serve the emergence of regenerative economies?

This is very different than how do we keep finance from harming the real economy as it exists today. In other words, what structural reform is necessary even in a world where we rid the finance industry of irresponsible behavior, fraud, and reckless greed?

This second path demands a new story, a new shared vision of the purpose of finance. Such a search led me to shift my focus away from financial reform to the economic system itself. Any bold new vision for finance must follow and serve a clear vision for a new economic system that works for people and the planet, generating a broadly shared prosperity. Otherwise, so-called "policy reform" is reduced to a game of cops and robbers — a reactive response to the worst of the ethical shortcomings so prevalent in finance. Dodd Frank and Basil III taken together, along with numerous other national reforms, were the collective response to the worst transgressions of the financial crisis of 2008. But capital controls and other regulations intended to limit bad behavior and systemic risk, useful as they are, hardly amount to a vision for prosperity.

THIS SECOND PATH DEMANDS A NEW STORY, A NEW SHARED VISION OF THE PURPOSE OF FINANCE.

Legendary systems scientist Donella Meadows once wrote that vision is the most vital step in the policy process. Unfortunately, our policy process rarely dares to imagine a new vision. Instead, it begins with implementation without even questioning underlying worldviews and the models that arise from these worldviews.

LEGENDARY SYSTEMS SCIENTIST DONELLA MEADOWS ONCE WROTE THAT VISION IS THE MOST VITAL STEP IN THE POLICY PROCESS.

My approach to a policy agenda for financial reform has been to follow a path I believe Meadows would have endorsed. It is grounded in a clear vision for a global network of *place sourced,*[5] interconnected and interdependent regenerative real economies, each emerging

5 Regenesis Group uses the concept of "place sourced" rather than simply geographically "place based" to signify that economies rooted in place emerge in the image and culture of that place. In my thinking, "place" can be any scale, can be any scale. But the larger the scale, the harder it is to get one's head around it. Bio-regional scale may be the largest scale that is truly human scale.

in the unique context of culture and place. It is a vision that looks at bioregions, where geological imprints and human culture intersect, together with Nation States and Corporations, as the proper units of analysis. It is a vision in which such a global network of regenerative developmental activity self-organizes and replicates in a tapestry of diversity. Such regenerative economies behave as living systems themselves, evolving to such a degree that they eventually transform or fully displace the tired extractive and degenerative economic system that is no longer fit for purpose. That system now threatens life as we know it on planet earth, while failing to address the growing social inequities that are morally repugnant, sowing the seeds of worsening political upheaval if not revolution.

As interconnected crises of ecology, political economy, and social justice continue to build, the shift to such regenerative economies will accelerate in response to these growing pressures. Real systems change in response to pressure. As these pressures continue to rise, the prospect of outright collapse will become ever clearer. Even those hanging on to the status quo will buckle to the forces of change, although the transition is sure to be filled with turmoil. Indeed, such a reality has already begun to define the 2020s, with Australia on fire, floods and hurricanes ravaging the globe, desertification marching steadily on, political extremism and autocracy overtaking a growing share of the world's nations as well as numerous failed states. And now as I write, the worst pandemic to befall humanity in a century causing depression level unemployment and an unprecedented strain on fiscal balances. And just when it could not get any worse, we see the eruption of a long overdue global protest movement in response to the horrific murder of George Floyd in Minneapolis at the hands of the police while he lay handcuffed, face down, on the pavement. The pressure seems unbearable at times.

This regenerative economy vision is guided by a holistic understanding of living systems design and guided by our eight principles. Such a living systems frame is remarkably aligned with our many wisdom traditions that have stood the test of time, particularly from indigenous cultures, the only human cultures that have sustained themselves throughout the course of human history. Within this living systems frame, we can hold the breadth of shared human values such as equity, dignity, security and compassion that rest at the heart of any vision for a just society. But human values are not the same as living systems principles. The premise of regenerative economics is that the former can only be sustained over the long run if our political economy is aligned with the latter.

Specifically we embrace the science based ecological limits of our finite planet articulated by Johan Rockstrom, et al, as "planetary boundaries."[6] These must be

6 Rocksrom, J. http://www.stockholmresilience.org/research/planetary-boundaries/planetary-boundaries/about-the-research/the-nine-planetary-boundaries.html

understood not as targets, but as non-negotiable thresholds we must respect in order to protect the integrity of earth systems upon which all life depends.

We also recognize the imperative of social floors, such as access to healthy food, clean water, healthcare, and education. The specific social floors are inevitably more subjective than ecological thresholds but they are not independent from the thresholds. Together, these ecological limits and social floors have been cleverly visualized by Kate Raworth as a doughnut in *Doughnut Economics*.[7] The Doughnut thresholds broadly align with the United Nations' Sustainable Development Goals, as discussed previously.[8] With a shared conceptual goal to operate "inside the doughnut," the visual in Figure 1 shows us just how far we are from achieving our goals.

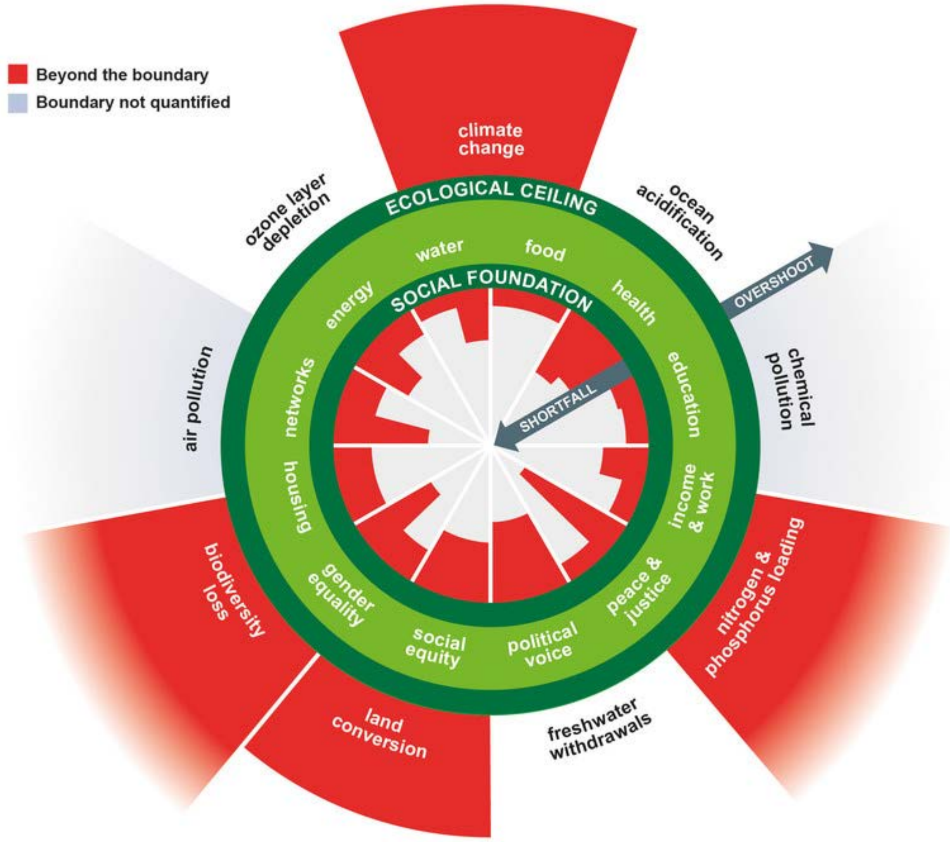


Figure 1

7 Raworth, K. *Doughnut Economics: Seven Ways to Think Like a 21st Century Economist* (2017)
8 An important caveat here is the SDGs embrace of economic growth as an unquestioned source of prosperity, without a recognition that much economic growth has become "uneconomic growth" as Herman Daly first use the term and in fact appears to be in conflict with the laws of thermodynamics and inconsistent with staying within planetary boundaries. This topic is discussed at length in "Regenerative Capitalism" and is at the heart of the development of Ecological Economics, seemingly missing from the SDG framework entirely.

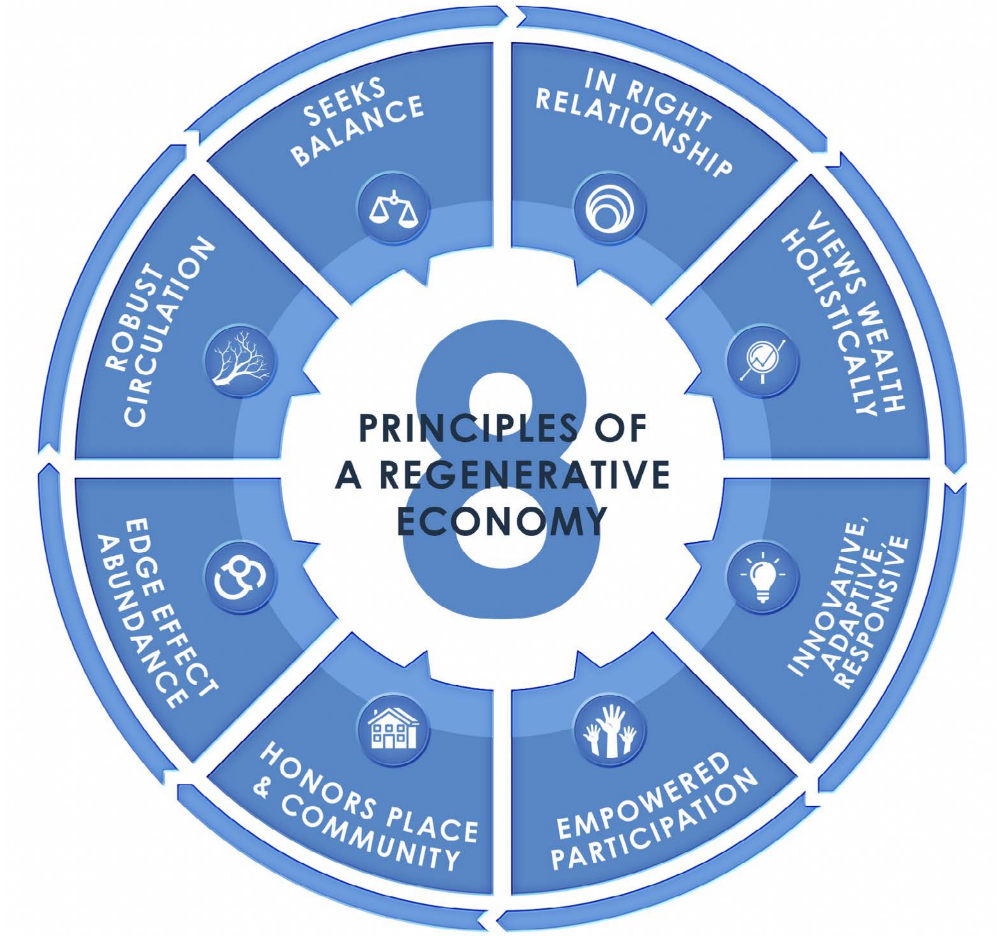
In "Regenerative Capitalism: How Universal Principles and Patterns Will Shape the New Economy," I argue that the best way to achieve these goals is to design our economies in accordance with the regenerative framework, using the eight principles as our North Star. It is the presently unrealized regenerative potential that we must unlock as the source of our future prosperity in an ecologically constrained world. Technology plays a part, but only a part of this larger, and hopeful story of regenerative potential.

> IT IS THE PRESENTLY UNREALIZED REGENERATIVE POTENTIAL THAT WE MUST UNLOCK AS THE SOURCE OF OUR FUTURE PROSPERITY IN AN ECOLOGICALLY CONSTRAINED WORLD.

In this paper, I argue that finance must be transformed for the primary purpose of serving the emergence of regenerative economies. A truly effective policy framework for financial reform must be designed with this vision and these goals in mind, and with this clear purpose for finance. Such a policy reform vision is a far cry from simply trying to mitigate the damage and destruction the financial sector can wreak on society if left to its own devices. Furthermore, I will not constrain my argument by any preconceived ideological limitations on what finance can be, should be, or should be allowed to do beyond this clear purpose: to serve the emergence of regenerative economies. Anything that is in conflict with this purpose must be discouraged if not eliminated. Anything in support of this goal must be encouraged and perhaps incentivized. Other than that, we let the principles guide us and the chips fall where they may.

Some will reject this vison as unrealistic or utopian. Admittedly, a practical implementation plan is still forming in my imagination, made harder by our broken political system and the necessity of global adaption to a significant degree. But without a clear vision and goals, and a more accurate model aligned with reality, we have no chance of designing policy prescriptions with a practical implementation plan to help guide us where we really need to go. Limiting ourselves to policies that are easier to achieve politically but do not transform the destructive path we are on is a waste of precious time.

With that as context, what follows below is a refresher on our 8 Principles of Regenerative Economics, considered in the context of our financial system. The policy ideas that follow will derive from these principles as well.



EIGHT PRINCIPLES OF REGENERATIVE ECONOMY

1. **Right Relationship:** Finance is a means to a healthy real economy, not the "end" of economic activity. The so called "financial economy" and the financialization of the economy is an abstraction that must be reined in, reconnected, and subordinated to the needs of the real economy.

   Finance must value collaborative relationships of mutualism over the competitive paradigm of transactions. Financial exchanges, like all economic exchanges, need to be generative for all parties involved, rather than extractive wherein they benefit one party at the expense of others, as is too often the case.

2. **In Balance**: The financial system should be appropriately scaled as a subsystem embedded in

and in service to the real economy. The economy in turn is embedded in society and culture, all the while recognizing and honoring the interdependence with all life and the healthy function of ecosystems of the biosphere, all in remaining in balance.

The financial system must balance the natural drive toward efficiency and greater short-term profits with deep, robust structural resiliency at the system level through decentralization and diversity, and with strict governors over scale, leverage and transaction speed. Enhanced resilience also demands larger buffers within institutions and within the money system itself.

3. **Holistic Wealth**: Finance should serve the creation of long-term genuine wealth creation, harmonizing multiple forms of capital in right relationship, using a fair financial return as a constraint for investment decisions that optimize whole system health, rather than optimizing only financial returns as the core system design it is today.

4. **Edge Effect Abundance:** Our financial system design must be based on an understanding of the interdependence between the private sector and the public sector in finance which is a surface level and almost artificial "edge." Such a reality demands a return to financial statesmanship, displacing financial opportunism which so much define modern Wall Street culture.

   There should be an abundance of generative, value creating collaboration among values-aligned investors, financial institutions, and enterprises from multiple sectors, mimicking nature's "edge effect" and deepening the opportunities for unlocking unseen potential in the process.

5. **Innovative, Responsive, and Adaptive**: Regenerative finance embraces genuine value-adding innovation, grounded in an ethic of transparency. It must respond to the new imperatives of the 21st century, directing capital away from degenerative activities and industries

and into the social and ecological imperatives. At the same time, finance must shed confusing layers of deceitful abstraction — established under the guise of innovation and efficiency — that too often severs healthy and vital trust-based relationships, and the resiliency that such relationships nourish.

6. **Empowered Participation:** Systemic health is an all or nothing proposition. We are only as strong as our weakest link. Financial inclusion is essential for excluded individuals and communities to realize their potential. It is vital for the health of the whole system which benefits from the creative diversity of participation and contribution from all communities, and whose health can be undermined when one segment or another is left behind. Creative collaboration across the "edges" of the private, public, and social sectors is essential.

7. **Robust Circulation**: The healthy circulation of money, often seen as the life blood of an economy, is the core purpose of a financial system. Like any circulatory system, this means a diverse balance of large arteries, medium sized veins, and numerous small capillaries, all working toward the health of the whole, not competing to extract from the whole. It means ensuring financial capital does not pool at the top or get cut off from the edges, but keeps recirculating into the emerging frontiers where it is needed most. Fiscal austerity when the system is weak and fragile is incompatible with the demand for responsible and prudent financial management when the system is thriving.

8. **Honors Community and Place**: Finance must reconnect to place and work in service to community because systemic economic health must be built from the local level on up, not from the top down. Regulations are needed to mitigate the natural flow of finance which is to concentrate power and capital where it is more "efficient" to manage, yet less resilient and effective for the health of the system as a whole.

Policy Implications for the Financial System

Many of the eight principles can only guide individual and institutional behavior if that individual or institution so chooses to follow them. It is difficult to effectively regulate, for example, ethical and inclusive behavior, or proactive responsible behavior, much less a belief system that finance must be a means rather than an end.

Nevertheless, government can use the regenerative paradigm, and the eight principles as as a North Star to guide the regulatory framework that applies to finance. In this way, we can transcend the tired ideological debate from the left and the right which can be simplified into a preference for more versus less regulation respectively. One side's belief is that finance is inherently greedy and reckless, a position that the Wall Street behavior invites. The other side argues that that while there may well be and have always been breeches in ethical behavior, the regulatory remedies will be worse for "economic efficiency" than the disease. And in this view, economic efficiency is code for growth and therefore prosperity (erroneous thinking as we are now understanding). In truth, there are valid arguments on both sides of this debate.

However, by adapting our guiding principles from a living systems view of economics and finance, there is an opportunity to transcend the current conservative vs. liberal divide, if we are able to first let go of ideology. Instead, let us embrace living systems science if our goal is a regenerative system as the true source of lasting prosperity.

With our living systems principles as our guide, I have identified ten broad policy guidelines for the financial system in an American context. Finance is global and interconnected, so individual countries and regions will be constrained and influenced by the global context within which they operate. But we must also not allow the well-worn demand for a "level playing field" to be an excuse for inaction, leading to a race to the bottom.

AMERICA, THEREFORE, HAS A UNIQUE OPPORTUNITY AND RESPONSIBILITY TO LEAD THE ESSENTIAL TRANSFORMATION OF FINANCE.

The United States is the largest economy in the world and — for better or worse — the undisputed leader in global finance as well as home to the one global reserve currency. Its domestic Treasury bonds are considered the world's safe haven investment. America, therefore, has a unique opportunity and responsibility to lead the essential transformation of finance. With leadership from America, other countries and regions can and will adapt as appropriate for their context.

These ten proposed policy recommendations, if implemented, would collectively shift finance and investment — and with it the entire real economy — in a regenerative direction. Perhaps more important, they would curb the most extractive and degenerative elements of the present financial system. Since finance is already interconnected with fiscal and monetary policy, and since the public sector is such a large share of the real economy in all countries, fiscal and monetary policies must be addressed in an integrated fashion, as well.

With the macro shifts I propose, the impossible task of policing institutions that are "too-big-to-fail" can be relieved at the source of the problem. An ounce of prevention in finance, through intelligent systemic design, is worth many pounds of a cure.

We will also see that the public-sector imbalances and structural flaws are at least as problematic as the private sector imbalances and resulting improprieties, something missed when we look at financial reform through a reductionist, "fix the leaks" lens. The 2008 mortgage fiasco, for example, was in part a private sector finance failure of reckless greed and fraud. However, it was also a failure of public policy and public investment due to the outsized influence of the Federally sponsored mortgage agencies Fannie Mae and Freddie Mac.

At first glance, readers may balk at the scope and scale of these proposals. Some of these policy shifts will have a progressive tone, while others will sound more rooted in free enterprise thinking. In this way, the proposals offer an opportunity to transcend this false choice.

As I will describe, these proposals are not constrained by the implementation challenges ahead, nor rooted in any political orientation. Rather, they simply follow our vision of where the regenerative, living systems principles naturally lead. In clarifying what truly is needed, we help illuminate how inadequate our current debate on financial reform really is. We are addicted to a reductionist and extractive finance ideology, and it is slowly undermining the health of our society.

WE ARE ADDICTED TO A REDUCTIONIST AND EXTRACTIVE FINANCE IDEOLOGY, AND IT IS SLOWLY UNDERMINING THE HEALTH OF OUR SOCIETY.

On their own, these policy shifts are insufficient. They must be coupled with a broad-based shift in consciousness and an emerging new story about the profound transformation of finance, and how it operates within an economy that is in service to life rather than money. The good news is that such a shift in consciousness is well underway, as evidenced by the broad embrace of the UN's Sustainable Development Goals, the explosion of new social enterprises around the world, the rise of impact investing, the Global Alliance for Banking on Values, the B-Corp phenomena, the conscious business movement, and even the recent shift within the mainstream for a more purpose driven "inclusive capitalism." The urgency of our Climate Emergency as articulated by the Club of Rome[9] is rapidly becoming a self-evident truth.

9 https://clubofrome.org/publication/the-climate-emergency-plan/

The Black Lives Matter movement is forcing a long overdue reckoning of capitalism's racist and colonial origins. And the global pandemic has laid bare for all to see our literal interconnectedness and the profound injustice of our present global economy. Nevertheless, if enacted, these policy shifts would provide vital and powerful support for the transition we seek. Public policy alignment with the leading edge of progressive business and finance is long overdue, hampered by the obvious corruption of special interests.

Ten-part framework for policy reform in the financial system

Our vision is a financial system in service of the emergence of a regenerative economy. Using our 8 Principles as our bearings to guide us in the journey, while avoiding ideological prejudices that would interfere with objective, living-systems science based design, I propose a ten-point policy reform agenda for the United States that can be adapted to the context of other countries.

Curtail Speculation
Curb excessive speculation. Encourage capital to flow to flow instead into real investment, and particularly into projects aligned with the transition to regenerative economies.

Reduce Leverage
Financial leverage in its many forms enhances capital efficiency while reducing systemic resiliency. Incentives for excess leverage must be reduced or eliminated, while incentives for equity and risk sharing partnership models increased.

Regulate for Fractal Structure
Rebalance the structure of the finance industry to heavily penalize systemic risk and concentration of power. Encourage structural diversity and broad circulation in the flow of capital by following the design of effective circulatory systems such as our fractal cardiovascular system. A healthy financial metabolism ensures circulation of money into small and mid-sized enterprises at regional and local scale rather than allowing ever more concentration at the top as is the case today.

Prioritize Business Formation
Encourage capital flow into new business formation in clusters — and into small business expansion — with emphasis on "green" business and social enterprises of all shapes and forms addressing genuine societal well-being. At the same time, curtail emphasis and State sponsored subsidies to large and concentrated business enterprises, particularly extractive and degenerative enterprises such as weapons and fossil fuels, while updating anti-trus laws for the 21st century.

Reform Tax System
Reimagine tax structure to tax "bads" like pollution and excess leverage

and speculation rather than "goods" like ordinary income.[10] Socialize windfall profits and dynastic wealth into both social and natural capital stocks that have been systematically depleted. Shift the tax burden away from low and middle wage level work and toward capital with offsetting incentives to high regenerative impact capital projects. Enhance systemic resiliency by upgrading and simplifying the social safety net to include a broad based guaranteed minimum income.

Test Sovereign Money

Launch multiple diverse, controlled, regionally-designed, sovereign money experiments of meaningful scale, beyond QE, in accordance with Modern Monetary Theory ("MMT").[11] Such programs should target renewable energy infrastructure assets, labor-intensive infrastructure repairs and upgrades, green infrastructure projects that restore vital ecosystem function, regenerative agriculture and related regional food system infrastructures. Experiment with education and healthcare systemic investment and a guaranteed minimum income, all of which help ensure all citizens are empowered to participate (one of our principles) in the economic transition.[12]

Realign Fiscal Spending and Investment Priorities

First, cut government waste and outdated priorities that are not adapted to the new context. Eliminate extractive and degenerative public investments and tax policies such as fossil fuel subsidies, capital investment subsidies over labor, and out of proportion defense expenditures.[13] Replace with regenerative public investments in education of all types, in physical and mental health focused on prevention, in the public health system, in innovative social enterprises, and in the social safety net — all in alignment with forward looking national security priorities and genuine well-being.

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10 English economist Arthur Pigou first proposed such a tax system in the 19th century, now known as Pigovian taxes. https://www.nytimes.com/2013/01/06/business/pigovian-taxes-may-offer-economic-hope.html

11 MMT is discussed in Act II of "Finance for a Regenerative World." It applies to any country that retains its own sovereign currency. A discussion of how countries who have abrogated their monetary sovereignty either by eliminating domestic currencies, pegging their currencies to the dollar of other international currency, or have followed an export driven, hard currency dependent development model is more complicated and beyond the scope of this paper.

12 As this paper goes to press, a massive MMT experiment is well underway plugging the income gap caused by the Covid depression.

13 It is difficult to engage in a discussion of the US Defense budget without entering into ideological territory — but from a regenerative systems perspective, it is impossible to justify the scale and scope of US Defense expenditures and their ecological footprint.

Realign Public Research Investment
In the new world of complexity, public investment must address root causes over responding to the never ending escalation of symptoms.[14] Bold new commitments to research in energy technologies, advanced material science, green chemistry, soil science and regenerative agriculture, and and in preventative healthcare and public health systems are all essential in order to catalyze innovation.

Redesign Philanthropic Incentives and Constraints to Accelerate Impact
Increase incentives to accelerate shift of dynastic wealth into charitable vehicles with greater accountability to the common good. Unblock the sclerosis within the philanthropic sector that prolongs perpetuity of individual foundations.

Establish Capital Investment Review Board (CIRB)
Establish a Capital Investment Review Board, perhaps at each of the twelve regional Federal Reserve Districts, to review the regenerative quality of all public and private *real capital investment*[15] programs greater than $250 million.

Let us now examine each of these proposals more specifically.

Curtail Speculation

> "SPECULATORS MAY DO NO HARM AS BUBBLES ON A STEADY STREAM OF ENTERPRISE. BUT THE SITUATION IS SERIOUS WHEN ENTERPRISE BECOMES THE BUBBLE ON A WHIRLPOOL OF SPECULATION."
> —*John Maynard Keynes*

Excess speculation is in conflict with many of our principles, and a prime example of confusing means with ends. It is often extractive, and always implies win-lose transactions rather than "right relationships" among investors and enterprise. It pushes

14 Modern Age thinking drives us to seek solutions to problems, but often the "problems" we seek to solve are mere symptoms of much deeper systemic failures. Shift private sector funding incentives accordingly.

15 By "real capital investment," we are referring to real public or private investments: infrastructure, plant and equipment, and real estate. We are not talking about financial investments, such as when a financial investor buys shares of stock or entire companies, or when companies acquire existing assets or entire companies.

the system out of "balance", another principle, accelerating boom bust cycles. It certainly has no room for "holistic wealth," as the pursuit of high-risk financial profit is the sole purpose.

As described in detail in Section II of this paper, modern capital markets have become dominated by excessive speculation. As a result, trust is damaged, and stability/resiliency is weakened. Furthermore, self-fulfilling and violent volatility with feedbacks into the real economy are amplified, especially now with algorithms dominating short term secondary trading. None of this activity is in service to the vital capital formation process of a free enterprise system. Rampant speculation is not necessary for so called "price discovery." Rather, we must see it for what it is: a form of pollution that undermines systemic health and must be curtailed.

To rectify this issue, meaningful disincentives to speculation can be implemented. To begin, we must implement a combination of a broadly applied and meaningful financial transactions tax (FTT)[16] coupled with a revision to the capital gains tax system that heavily penalized short-term speculative profits. We can allow exceptions for genuine market making facilitation that genuinely serves the system, while at the same time incenting progressively longer-term investments with reduced capital gains rates. For example, for holding periods below six months, the capital gains rate might be 50%. For holding periods beyond six months and up to three years, the normal income tax rate for other forms of income would apply, and for holding periods beyond three years, a modest reduction in the tax rate might apply but only for "real investments" that are not degenerative by their nature such as fossil fuel extraction.[17]

To really curtail the incentive for high risk speculation, an additional windfall profits tax should be considered above a certain threshold, on the grounds that systemic health is enhanced through the elimination of large scale, high risk speculation. Of course, such a tax regime would need to be imposed broadly across all major financial centers — no easy feat.

At the same time, tax break incentives should be considered for socially vital investments, such as investments in business formation in inner city communities, clean energy infrastructure, greening existing real estate, and health care services for low income families. Careful criteria and simple enforcement mechanisms would

16 I have written numerous articles about the logic and benefits of a broadly imposed FTT which can all be accessed at Capital Institute https://capitalinstitute.org/?s=ftt

17 Real investments include investments that stimulate direct demand in the real economy. For example, building a bridge or a house, investing in a start-up business. While buying shares directly from a company in a secondary offering, whose proceeds will be used to hire people or build a factory, etc. would qualify as "real investment," simply buying shares of stock on the secondary market from another investor/speculator and holding for three years would not qualify for the tax subsidy.

need to be developed. The disincentive toward excess speculation will naturally "crowd in" capital into the real economy, even if at lower expected returns than may exist for some in the speculative arena.

Such policy shifts would be real progress — but would also be extremely destructive to Wall Street as trading volumes would shrink by more than 50% in the United States, wreaking havoc on profit margins, while rendering much speculation uneconomic. That's the point. Cost cutting would ensue and Wall Street would shrink. High frequency trading — apart from legitimate market making — would largely disappear. The trading desks of investment banks would further contract. Many hedge funds would struggle to keep money under management with lower returns. Wall Street compensation would drop. The stock exchanges and related data companies might drop in value by half or more, ushering a wave of consolidation to shed excess capacity. Real estate markets in financial centers would suffer. All the ancillary services that support Wall Street — from telecommunications to legal, from car services to restaurants — would suffer. The knock-on effects to municipal budgets, particularly to the financial center of New York, would be significant. If London followed down a similar path, it could be highly destructive given its concentration in finance and the response already triggered by Brexit.

Such policy shifts would be real progress — but would also be extremely destructive to Wall Street as trading volumes would shrink by more than 50%

Clearly, a thoughtful implementation plan and extended transition period would be essential to mitigate such a drastic systemic adjustment. In the long run, however, such a transition would be healthy for the real economy in financial centers and certainly across the real economy, reducing structural inequality in the process. Human capital would find more productive work in the real economy; rocket scientists would go back to designing rockets rather than derivative deceptions on Wall Street. More importantly, if we fail to rectify the current "whirlpool of speculation" as Keynes colorfully warned, we will fail to transition to a regenerative economy.

Reduce Leverage

Financial leverage in the system increases efficiency — of returns to capital — at the cost of resiliency. As we have discussed previously and observed in the real world, this drive for efficiency, which is really a thirst for profits and often a reflection of unrestrained desires if not greed, is out of balance. Systemic health is undermined as a result, just as our principles would suggest.

Financial leverage in the system increases efficiency at the cost of resiliency.

Americans have a passion for home ownership. Studies have demonstrated the social and financial benefits of home ownership over the long run. These studies have justified the establishment of a massive federal housing subsidy, most notably the inclusion of the mortgage interest deduction. Mortgage finance efficiency has been enhanced by the establishment of the mortgage agencies, Fannie Mae and Freddie Mac which facilitate the securitization of mortgages into what is now the largest capital market in the world with some $15 trillion outstanding.

Meddling with this market will have profound feedbacks to the financial system, but also to the real economy. While I would favor more significant restrictions in mortgage lending,[18] the first thing we should do is to limit the size of mortgages that can be subsidized with the interest deduction so that it primarily benefits first time homeowners, and does not subsidize second homes for the most well off, and the associated ecological footprint that is ushering in systemic collapse. This policy will need to vary by geography due to differences in housing costs. Overall, such a policy would reduce the leverage in the system, while preserving the subsidy to first time home buyers.

Second, we must eliminate the interest deduction incentive for speculation. As discussed above, we have a "whirlpool of speculation," damaging systemic health. Worse, we subsidize it with the interest expense deduction without which much of it would not be profitable.

Third, we must limit the interest deduction incentive that favors debt capital over equity capital in business. Small business with limited access to equity capital would be the exception. We should offer this and additional incentives to support small business as will be discussed below.

Fourth, the market and practice of leveraged lending needs careful scrutiny, rather than subsidizing this activity. Debt has been used by the leveraged buyout industry to extract value for investors at the expense of other stakeholders and the health of the economy as a whole. Furthermore, there is a well-worn pattern first articulated by Hyman Minsky where banks compete for deals with ever looser covenants during boom times, guaranteeing the boom-bust cycles we witness. The recent reckless lending into highly cyclical oil and gas fracking is but the latest example.

Outright limitations on debt relative to a company's free cash flow have become

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18 The goal of expanding home ownership is one of the "unquestioned truths" in need of discussion. On the one hand, it makes complete sense, part of the American Dream, a path to wealth building, and a source of family and community stability. But for the vast majority of individuals or families, taking on a mortgage, particularly in an uncertain employment context is likely the single most risky financial transaction they will undertake. Such risks will have consequences as we have painfully learned in the wake of the 2008 financial collapse. As our principle guides us, we need to find a balance between the efficiency of mortgage finance and the resiliency of lower degrees of leverage in the system.

necessary. Today's excessive debt, and the explosive growth of the entire leveraged lending industry over the past couple of decades should be seen as the aberration it is to a healthy economy. Since free market forces allowing it are driven by misaligned incentives, regulatory intervention is necessary. Defining "excess leverage" is not a trivial task, and there is no simple solution. But the status quo is clearly undermining systemic health.

TODAY'S EXCESSIVE DEBT, AND THE EXPLOSIVE GROWTH OF THE ENTIRE LEVERAGED LENDING INDUSTRY OVER THE PAST COUPLE OF DECADES SHOULD BE SEEN AS HE ABERRATION IT IS TO A HEALTHY ECONOMY.

Such debt limitation policies will be fought to the death by Wall Street banks, hedge funds, and the private equity industry because their business and excessive compensation depends on reckless amounts of debt. That's a fight that's essential to win and is long overdue.

Finally, we must examine the same subsidy to debt over equity in the commercial real estate industry which is predominantly debt financed. The story is the same. Excessive leverage and reckless debt structures exacerbate the boom bust nature of the industry, with spill over affects to cities and the real economy more broadly. Any interest deduction subsidy should be targeted to regenerative real estate development, such as infill projects, clean and green high-density projects near public transportation, or projects with other compelling social benefits such as public and affordable space. There is no reason we should be subsidizing real estate developers who build $50 million condominiums in Manhattan for Russian oligarchs, Chinese tycoons, or hedge fund managers, any more than we subsidize so called activist hedge funds who often wreak havoc with the long-term decision-making process at corporations.

As with the policy to rein in speculation, if we raise the cost of debt capital by eliminating subsidies, there will be knock-on effects throughout the finance industry that will create a one-time painful adjustment. However, the ninety-five plus percent of the population which is disconnected from Wall Street and real estate development will be left with a more resilient economic system.

FRACTAL STRUCTURES ENSURE VITAL RESOURCES EFFICIENTLY REACH TO ALL EXTREMITIES OF THE SYSTEM, WHILE AT THE SAME TIME ENABLING ALL COMPONENTS OF THE SYSTEM TO CONTRIBUTE TO THE HEALTH OF THE WHOLE.

Regulate for Fractal Structure

As we reviewed in the discussion of our "Robust Circulation" principle of regenerative economies, effective circulatory systems are designed in fractal patterns that repeat across scales, like the root and branch system of a tree. Fractal structures ensure vital resources efficiently reach to all extremities of the system, while at the same time enabling all components of the system to contribute to the health of the whole. As one moves to higher levels of the system — like the main arteries in the human cardiovascular system, or oak trees in a forest — the entities tend to act increasingly in service to the needs of the whole system rather than using their power to simply extract for themselves. Systems have evolved so that such participants higher up on the food chain understand that their own health is entirely dependent upon the health of the whole system. Such an understanding should be the guiding wisdom of financial system regulation. In this sense, we say that regulators should regulate for fractal structure and function.

In practice, this means valuing and encouraging a plethora of small and mid-sized financial intermediaries that serve the real economy as an end in itself, while constraining the extractive power of the big fish at the top. While such an approach happens to align nicely with the original intention of our anti-trust laws, it goes further. It says fractal structure enables the critical circulatory function a healthy system needs. Anti-trust (when enforced) merely curtails extraction by the powerful. The former is proactive, the latter reactive.

For starters, we need to rediscover the political will do use existing anti-trust laws to counter capitalism's natural tendency toward concentration of power. In banking, measuring branch and deposit concentration is a quaint notion of monopoly power. Market concentration needs to be looked at across all lines of business, beginning with mundane activities where banks make a lot of their money such as in credit card processing and treasury services. These technology intensive but capital efficient activities have large economies of scale and thus work as natural monopolies. They are enormously profitable, which means they are extractive. Like other natural monopolies, regulated pricing may be a more efficient response than breaking them up. Such large essential "arteries" of the banking system would then continue to serve the health of the whole system with a fair return, but unable to use their power to extract from the system as is the case now.

Regulating for a healthy fractal structure also means applying a very heavy hand to systemically important banks who can threaten the entire system if they fail. At the same time, it means applying a more lenient hand to more regionally focused and smaller firms serving the real economy without threatening it if they fail. Stepped up regulatory pressure and stringent capital surcharges larger than exist today on large extractive banks would cause these banks to elect to split into smaller and more focused enterprises in order to achieve favored status by regulators. Relief from excess capital charges would act as a strong incentive. Of course, such onerous capital surcharges would not suit the stock price, bonus pool, and compensation desires of "systematically important" bank CEOs — so brace for a fight.

Similar influence would need to impact the structure of the non-bank financial system, which also naturally moves toward highly concentrated power. While the leverage and speculation policies described above would go a long way toward breaking their grip on power, we want a venture capital industry and a private equity industry that resembles a fractal structure serving the real capital formation needs of the real economy. Numerous incentives and taxes could be explored to push the financial sector in such a direction, such as capital gains holidays for funds investing in underinvested communities, coupled with surcharges being applied to funds exceeding certain scales — perhaps beginning with $1 billion in assets under management, ramping up at $10 billion. As with banking, asset management is a natural monopoly. So price controls may be a necessary tool to complement incentives for fractal structure to enhance circulation of investment deeper into the real economy. Such diseconomies of scale would mitigate the tremendous economies of scale that drive the unhealthy and degenerative concentrations of power in finance.

Business Formation

A diversity of new business formation is the life blood of a regenerative economic system. Entrepreneurs "innovate, adapt, and respond" while mature monopolies extract and stifle innovation. Policy, therefore, should incentivize the creation the creation of good businesses and social enterprises that operate in a regenerative fashion, serving the needs of all stakeholders. Too often, policy is aimed at subsidizing the most powerful large corporate interests, either due to outright corruption in our special interest dominated political system, or because of some nationalistic desire to protect our industry. Why do we have a national defense strategy that appoints the President of the United States as a salesman working for our aerospace and weapons industry? Rather than flogging planes and missiles, our policy and tax incentives should be focused on regenerative business formation in communities that need them the most.

New, diverse business formation is the life blood of a regenerative economic system.

Capital naturally flows to centralized pools which then do what's most "efficient" which is to invest in large existing assets, from buildings to companies. Investing in the arduous and "inefficient" tasks for new business formation or complex one of a kind projects that communities need is harder work and not where capital naturally flows. Therefore, policies that incentivize and subsidize business formation and critical infrastructure projects are essential. The Small Business Administration in the United States has several such programs, and they should be expanded by a factor of ten with new experiments, and implemented on a regional basis. Partnerships between the SBA and regional divisions of the Federal Reserve Bank who are closer to the needs of each regional economy should be explored. Capital gains holidays from this truly vital investment activity make sense, encouraging capital to flow where it is needed most. The current policy of capital gains tax breaks for speculation in existing shares of any stock or stock index which has little or no impact on the real economy has not place in a regenerative financial system.

Reform Tax System

The idea of Pigouvian taxes on externalities date back to 1920 and the ideas of economist Arthur Pigou.[19] The taxing of "bads" have been supported by many modern economists particularly in the context of seeking to "internalize" such externalities into the pricing system. A carbon tax[20] would be an example of a Pigouvian tax. Shifting the tax burden to tax "bads" while easing the burden on "goods" such as employment makes eminent sense and would make an important contribution to incentivizing what we want rather than what we don't want. Yet today we tax labor and have yet to create a uniform tax on carbon.[21] Eliminating subsidies for what we don't want — such as the massive subsidies that go to fossil fuel energy — is the other half of the equation.

Furthermore, our tax system must more effectively address the growing inequality in society. This inequality is not only a moral crisis which is the lens we usually use to debate it. Extreme inequality is incompatible with systemic health since it violates the principles of "in right relationship," "in balance," and "empowered participation" from our 8 living systems principles of regenerative economics. A more progressive income tax system is the obvious solution, but it does have practical and political obstacles. I would favor a tax system that limited the extremes in the first place as a priority. In other words, we should focus on "pre-distribution of wealth" in order to reduce the need to redistribute wealth. There are numerous ways this could be accomplished.

WE SHOULD FOCUS ON "PRE-DISTRIBUTION OF WEALTH" IN ORDER TO REDUCE THE NEED TO REDISTRIBUTE WEALTH.

The concept of a windfall profit tax could be applied broadly, enabling society to share in the outsized equity gains derived from numerous business success stories. In all cases, spectacular business success has at least some foundation in either endowed natural resources that have been privatized, or the cumulative innovations of mankind, often funded by government research, but in all cases inherited from society. For example, without the microchip, there would be no Microsoft or Apple, and without the internet there would be no Google or Facebook. Why shouldn't society participate directly in these successes with some form of windfall profits tax that only kicks in above a certain level of outsized success, perhaps when the market capitalization of a company exceeds $1 billion, or $10 billion. In fact, imagine if society owned out of the money call options

19 Pigou, A. C. (1920). *The Economics of Welfare.* London: Macmillan. Pigou suggested we should tax "bads" like pollution that economists call "externalities" because their costs are not captured in prices.

20 Carbon tax regimes are beyond the scope of this paper. However let us just say here that a carbon tax to be effective must behave more like a quota over time, with a tax rate high enough not simply to raise money, but to shift usage away from fossil fuels entirely.

21 The proper way to constrain carbon is actually with a quota, with a complicated allocation challenge. A carbon tax is a reasonable first step that is probably politically easier.

on all new business enterprises with a strike price at the $10 billion enterprise value level. Perhaps these options would entitle society to own say 10% (or 20%) of Apple, Microsoft, Google, and Amazon, perhaps with a right to a preferred dividend and a seat on the board of directors representing the public interest as stakeholders in such powerful and profitable enterprises. When the pressure rises enough, the seemingly impossible can become the inevitable.

The wealth inequality of our capitalist system makes income inequality seem downright trivial in comparison. It is this wealth creation possibility that is the magic of capitalism and thus the source of a more equitable system, including the resources to address our collective needs. Would capitalism be any worse off if Bill Gates' net worth was only $60 billion instead of $90 billion? Or maybe a second windfall option should kick in at $10 billion (or $1 billion) per fortune, capping individual wealth in the system so Jeff Bezoz' wealth can't escalate toward $200 billion and beyond during the pandemic while unemployment hits depression era levels. Such pre-distribution features, extending throughout the wealth creation spectrum could be built into the system with no impact on motivation to work as some will argue. It is simply much easier politically and emotionally to tax windfall profits as is common in the oil industry than it is to raise marginal tax rates beyond 50% and enact a meaningful wealth tax to redistribute wealth after the fact.

Another concept that should be revisited is economist Henry George's land tax. It is fundamental to the realities of balancing the desire for real estate development with the physical limits of a finite planet. It also introduces the idea of taxing natural surpluses, with land that is endowed to produce a surplus being the case in point. We can apply the same logic to tax surpluses created by business monopolies and to today's powerful digital platform business models. The concept is simple: surplus is not individually created. Surplus is communal and is to be shared.

Finally, nothing is more unfair than allowing massive dynastic fortunes to pass untaxed from generation to generation.[22] Such dynastic wealth is in part what we fought our Revolutionary war over! Beyond some amount per individual inheritance, an estate tax should kick in to recycle all surplus wealth for the common good either through direct taxation, or as an incentive to give the surplus to the legitimate charities of one's choosing. Again, this is not merely my opinion. It is what "robust circulation" — one of our regenerative principles — tells us is required if we want a healthy, regenerative system. It's living systems science, not ideology. Society can hold a vigorous debate on what that threshold should be, provided that the answer satisfies our principles of "in balance" and "empowered participation" while making possible "right relationships" among citizens. Much subjective judgment will be needed as some will argue for $1 million, some $100 million or more, although they would represent a small

22 http://capitalinstitute.org/blog/fix-dont-flush-estate-tax/

minority for sure. If I had to pick a number, it might be $10 million per heir, with no loopholes. The point here is not to defend any number, but to defend the concept of a limit.[23]

True patriots and humanists like Warren Buffett are leading by example, although the Giving Pledge set the bar far too low, in my opinion.[24] We should tighten our definition of "legitimate charity" – Harvard University may have outgrown that definition with its existing $40 billion endowment, a thought worth our consideration. For a healthy system, we want our non-profit sector to be structured along the same fractal lines as the private sector. In that sense, Warren Buffett's decision to donate the largest share of his wealth to the Gates Foundation, already the largest private foundation in America, works against the goal of this more balanced, fractal structure. This remains true regardless of what one thinks about the Gates Foundation's grant making focus and efficacy. And finally, we must address the requirement to accelerate the recycling of this wealth back into natural and social capital as discussed in detail below under "Redesign Philanthropy Incentives."

Test Sovereign Money

The logic and arithmetic of MMT is sound as summarized previously in our discussion of money in Act III. What's missing is some real world understanding about how far these ideas can be pushed without triggering some crisis in confidence in a home currency. Certainly, we know that Central Banks of leading economies can print $1 billion dollars and spend it on anything they think useful to the economy and we won't trigger any real inflation or even inflation expectations. What's unclear is if printing $1 trillion might, although that experiment has now begun its second trial in response to the Covid crisis. Nor is it clear how much it matters what the money is invested in or spent on, and from what baseline of deficits or surpluses such MMT initiatives can safely be enacted. But central banks are proving the unthinkable is possible as they try to shore up the hole in the global economy caused by the pandemic. The long term consequences remain to be seen. MMT experts and this author believe that monetizing debt and getting the money into the hands of people left suddenly out of work is the perfect use of this tool, and will not trigger inflation.

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23 The mere discussion of a $10 million inheritance limit reflects how far out of balance we have allowed the system to become. I chose it mostly because I can defend it as "certainly enough" to satisfy the natural desire to provide for one's family members with unpredictable needs in an increasingly uncertain world. I wish I lived in a country and a world where the amount of "enough" was much closer to the median wealth of the society, about $100,000 for an American family today. But many other changes would be needed to make that remotely realistic in 20th century America. The number would be very different in different societies.

24 The Giving Pledge, launched by Warren Buffett and Bill Gates asks its signatories to commit to donate at least half their wealth to charity during their lifetime. A more appropriate bar to set might have been 100% beyond some threshold, be it $100 million or $1 Billion.

But it doesn't end there. In a world with massive unmet public investment needs, we simply need to learn how to use the insights of MMT for society's benefit. The Green New Deal, or similar ideas to transition our energy system are essential and require rapid investment of trillions of dollars. The public sector must play a role to accelerate this investment and be sure it gets to all the difficult places it needs to go. Similarly, public investments in education can be augmented using MMT as a way to deal the vast inequities of our locally funded secondary education system. The list goes on.

> AN ENORMOUS OPPORTUNITY FOR INNOVATION IN OUR MONEY SYSTEM LIES AT THE "EDGE" OF SOVEREIGN MONEY SYSTEMS AND COMPLEMENTARY CURRENCY DESIGNS.

If this were the private sector, we would be running a series of experiments and learn by doing. The regional districts of the Federal Reserve should be running such experiments as the laboratories of monetary innovation on a scale that is safe yet meaningful in the context of the urgent needs. Such applied research should make a special effort to find collaborations with the numerous digital private complementary currency designs that have a public purpose in mind, as opposed to nefarious or merely speculative objectives. An enormous opportunity for innovation in our money system lies at the "edge" of sovereign money systems and complementary currency designs. The arrival of blockchain and now holochain technology may be just the game-changer necessary to make real breakthroughs a practical reality.

Transform Fiscal Spending, Subsidy, and Investment Priorities

There will be no finance for a regenerative world without a radical transformation of public investment priorities and flows. Those of us in the "sustainable finance" community need to focus as much energy on the public sector as we do the private sector. Remember, public sector investment's sole purpose is to be in the interest of the common good, not to maximize return on investment (calculated in the conventional reductionist fashion.) What better place to begin!

Total Federal, State, and Local expenditures in the United States are estimated to be $8.1 trillion in 2020,[25] or approximately 38% of annual GDP.[26] Furthermore, the total

25 This figure was prior to the COVID-19 pandemic. With trillions and counting of Government deficit spending, the point is now materially amplified. https://www.usgovernmentspending.com/total

26 The scale of the public sector as a share of the total economy is an important issue beyond our consideration here. But this critical issue can be examined productively through a regenerative lens and will likely transcend unhelpful binary ideological debates about the merits of big government and regulation versus free market solutions. This is a research question demanding serious analysis, but it is reasonable to expect that the self-organizing, self-regulating, continuously adapting nature of living systems have important lessons to teach us with respect to the design and relative scale of public sector policies.

impact of the public sector dwarfs even these massive direct spending numbers due to the use of tax breaks and other subsides to incentivize certain activities over others.

Perhaps the largest single non-cash federal subsidy goes to the financial sector in the form of the lender of last resort protection for large banks by the central banking system. The IMF estimated this subsidy to be $70 Billion per year in the US alone, and much larger across the Euro zone.[27] As staggering as this figure is, it does not count the trillions invested to stabilize credit markets, bailing out the banks in the process during the 2008 financial panic. Nor does it include the additional trillions being invested today in response to Covid, stabilizing financial markets and providing direct support to entire industries, small business, and individuals, imperfect as it all is.

One simply cannot talk about a financial system in service to a regenerative economy without beginning with the public financial flows and subsidies of this scale, for it has an inordinate influence on how degenerative or regenerative the economy can be. Remember, these are public dollars, theoretically designed to be in service of the public good, literally our common wealth. If policy directing these flows were done in accordance with regenerative design, the economy and society would be well on its way to becoming regenerative as a whole.

We have now opened Pandora's box, well beyond the scope of this paper. Here I will just make a few high-level points about fiscal priorities as they relate directly to finance and government finance agencies, to help us imagine what the public sector priorities should be in order to support the emergence of a regenerative economy in service to a regenerative world.

- Government waste and corruption is degenerative in a world of scarce public resources. [28] Any plan to transform fiscal priorities must begin with a renewed focus on waste and corruption in all its forms. I'm not suggesting that government be run like a business. It's far more complex than that simple slogan some would suggest. But if it were, finding new efficiencies every year would be part of the culture to contain waste. Even a 5% net reduction across the totality of government steady state expenditures (pre-Covid) in the United States would free up $400 Billion of annual investment capacity for regenerative initiatives, from public health to education to renewable energy. When the

27 https://www.imf.org/en/News/Articles/2015/09/28/04/53/sopol033114a

28 We make the case in the section on Money that understanding MMT should change our belief in scarcity of public spending and investment capacity. Yet this only applies at the Federal level, and even there, we know that fiscal discipline will always be important in order to retain the trust of the society and confidence in the currency in international markets.

context is changing at faster and faster rates, trimming and reprioritizing must become part of the culture of the public sector, rather than just spending on new problems.

- Establish a trans-disciplinary Council of Regeneration Advisors to replace and subsume the Council of Economic Advisors. We must reimagine and reprioritize our fiscal needs. The breadth of this reimagination is beyond the scope of this paper. But it begins with a shared understanding that GDP growth can no longer be our path to prosperity, and our national security is not a function of military might alone. Our fiscal priorities must respond to this truth.

ESTABLISH A TRANS-DISCIPLINARY COUNCIL OF REGENERATION ADVISORS TO REPLACE AND SUBSUME THE COUNCIL OF ECONOMIC ADVISORS.

- But something is seriously wrong when we have stockpiles of nuclear weapons but not PPE and ventilators despite the virtual forecast of a pandemic like we are now confronting. Defense spending is literally out of control, with US spending exceeding the next ten countries combined.[29] The excesses of the military industrial complex that General Eisenhower warned of is most certainly degenerative and has little to do with true defense. It's time for our industrial approach to defense to transform fully to the information age, leave behind the relics of the Cold War. A similar and comprehensive fresh look must be made with respect to eduction, healthcare, and the social safety net, all looked at through a regenerative lens using first principles as our guide.

- Infrastructure projects of all kinds, from roads and bridges, to buildings and power plants, to transmission lines and transportation, should be vetted through independent agencies using a regenerative lens, with strict veto and enforcement power, before any public funds are committed. This could be done at both the Federal Level and at the State Level. But first there needs to be a shared commitment to the quality of infrastructure we need.

- Federal subsidies for degenerative activities must end. Oil

29 https://www.pgpf.org/chart-archive/0053_defense-comparison

Change International estimates that direct global fossil fuel subsidies approach a stunning $1 Trillion annually. Ending this insanity, the result of political corruption over many years by powerful interests, is where we must begin. That amount does not include the very real "externalized" costs on society, most notably the costs resulting from climate change and the health effects on poor and often minority communities situated near refineries and chemical plants.

Oil Change International estimates that direct global fossil fuel subsidies approach a stunning $1 Trillion annually.

- End the undifferentiated "too big to fail" bank subsidy. It could easily be constrained to support only banks that demonstrate that their business models are regenerative to the economic system, rather than extractive. The members of the Global Alliance for Banking on Values provide the example, a model all banks could follow or lose their deposit insurance and access to the lender of last resort privileges. This shift alone, coupled with more onerous capital requirements for banks outside the Fed protective window, would profoundly transform the banking industry in a regenerative direction, while reining in destabilizing speculation, leverage in the system, and excessive (and degenerative) banker compensation in the process.

- The enormous and often highly leveraged non-bank financial activities of private equity, hedge funds, and other shadow banking activities would require additional tools to redirect financial flows away from extraction and instability and toward resiliency and regeneration. Again, the principle is "balance" and we are skewed way toward efficiency[30] and need to build resiliency.

- To begin with, the interest expense deduction on resiliency destroying leverage is a massive fiscal subsidy that undermines systemic health. It should be eliminated with a

30 In this case "efficiency" is in the context of return on capital. Leverage leads to higher returns, but also more volatile returns, or as in the case of Long Term Capital Management in 1998, seemingly higher returns without excess volatility until a "black swan" event occurred. This is the reality of complex systems, and thus the critical need to value resiliency, even at the expense of some "efficiency" of returns on capital. Better buffers against black swans are essential.

few targeted exceptions. On the regulatory front, leverage limitations of all forms must be imposed or tightened to improve overall system resiliency. It makes no sense to have 50% margin limits on stocks while margin on futures is less than 5%. For institutional accounts speculating with billions, leverage is nearly unlimited via swaps and repos, as we learned with the Long Term Capital fiasco in 1998. Things have improved since then, but high leverage is still considered a right of speculators and that must be confronted. Most obviously, the embedded leverage in certain ETFs used purely for speculation have no place in a healthy financial system.[31] And the extractive (degenerative) behavior of many activist hedge funds needs fresh scrutiny and new constraints, a complicated task but one we must address. Such changes will hamper speculation and all forms of leveraged returns to capital, a cost we must welcome despite the violent reaction it will trigger from Wall Street. Vast human and financial resources will shift away from Wall Street and into the productive economy as a result.

Such changes will hamper speculation and all forms of leveraged returns to capital, a cost we must welcome despite the violent reaction it will trigger from Wall Street.

- In the United States, the three quasi government mortgage agencies — Ginnie Mae, Fannie Mae, and the Federal Home Loan Corporation — that purchase and securitize residential home mortgages represent a massive mortgage finance subsidy system designed to lower the cost of home ownership. This subsidy combined with the mortgage interest deduction, should be limited to first time home buyers and to the kind of energy efficient, high density housing a regenerative economy requires. It should not subsidize second homes for wealthy Americans on the coast of Florida that sit empty running air conditioning all summer as it does now.

- Despite the many complexities and imperfections of the mortgage agencies, they have broadly achieved their desired policy objectives on a scale measured in trillions of dollars. A similar approach on similar scale should be designed to

31 For example, the Ultra Pro ETF creates 3 times leverage to the S&P 500 and trades 17 million shares per day, mostly pure speculation. It make a mockery of the 50% margin regulation for stocks in the United States, a limit that should also be tightened to enhance system resiliency.

subsidize and accelerate our energy system transformation, and a new balance established between the imperative of clean energy infrastructure investment displacing significant non-essential housing investment.

- Displacing extractive and degenerative industrial agriculture, and replacing it with regenerative agriculture must be the policy priority. Doing so will drive a profound shift in our trade policy, the subsidy system, the crop insurance system, and the $300 Billion Farm Credit System and related agencies, as well as the $140 Billion annual budget of the United States Department of Agriculture. Collectively, these are massive financial flows that largely encourage degenerative agriculture practices that appear profitable and productive in the short term, but are in fact undermining the systemic health of both people and the planet. Without radical changes in agriculture policy, the rapid shift to healing land, healthy people, and regenerative economies is impossible.[32]

DISPLACING EXTRACTIVE AND DEGENERATIVE INDUSTRIAL AGRICULTURE, AND REPLACING IT WITH REGENERATIVE AGRICULTURE MUST BE THE POLICY PRIORITY.

- Finally, we must reimagine municipal finance in the United States. States receive a massive tax subsidy in the form of issuing non-taxable municipal bonds, lowering their cost of borrowing. This subsidy must be redesigned to encourage the regenerative investments we need — such as community solar and public transportation. At the same time, we must curtail subsidies to projects that move us in the wrong direction — such as new highway systems that encourage sprawl on the promise of a short-term employment that neglects long term consequences. More challenging, we must take a fresh look at State and Municipal budget capacity to tackle the monumental challenges we face. A careful role for central bank debt monetization in accordance with MMT, channeled through State and local governments to augment their constrained budgets is inevitable if we are to transform finance for a regenerative

FINALLY, WE MUST REIMAGINE MUNICIPAL FINANCE IN THE UNITED STATES.

32 Regenerative agriculture is essential for a regenerative economy. There is a wealth of resources on this topic including https://thecarbonunderground.org/, https://rodaleinstitute.org/, https://landinstitute.org/, https://savory.global/, and many more.

world in a timeframe that matters.

Realign Public Research Investment

Regenerative finance demands realignment and an increase in commitment to public investment in research. Stable systems don't require such levels of research — but the unprecedented systemic transformation we need naturally requires innovation on a scale we have not seen before.

Stable systems don't require such levels of research — but the unprecedented systemic transformation we need naturally requires innovation on a scale we have not seen before.

For example, many have called for a new "Manhattan Project" on energy system transformation, funded by public dollars to achieve game changing innovation that is deemed too speculative for private sector funding alone. When the public interest is so strong for such breakthroughs, and the inertia against big change by the incumbents is so powerful, there is a clear case for large scale public funding. It is not hyperbole to say the future of humanity is now at stake.

Unfortunately, one of the most destructive costs of the hangover from the 2008 financial crisis is that public sector balance sheets were already overburdened with debt that resulted from the steep recession, and now we are compounding the problem due to Covid. Our ideological belief pushes leaders toward austerity mind sets right at the time when bold new investments in research are essential. This must be overcome. At the same time, the private sector, pressured by short term demands of the market, is making fewer long-term commitments to research and development, preferring to buy back their stock instead.

We need bold public-sector commitments in critical areas of innovation, with incentives for private sector collaboration with an aim to accelerate commercialization opportunities. Such commercialization opportunities are examples of the real investments, measured in hundreds of billions of dollars, we need private capital to flow into. Opening up these opportunities requires working across the "edge" between the private sector and the public sector.[33]

Equally important, yet harder to implement is a holistic approach to public sector research. Consider public health. Cancer drugs are now a $100 billion global business, tightly woven into public research expenditures with the private sector commercializing publicly and philanthropically funded research. If only the focus was

Equally important, yet harder to implement is a holistic approach to public sector research.

33 See "edge effect abundance" principle of Regenerative Economics https://capitalinstitute.org/8-principles-regenerative-economy/

more on identifying root causes that interfere with healthy immune system function (to prevent disease), rather than treating cancers which are often symptoms of immune system breakdown! For economies to become regenerative, such major investment programs and entire industries like the drug industry will need to adapt to more holistic thinking. In the meantime, what is more accurately labeled the "disease care" industry saps the vitality from society, hampering its regenerative potential. A shift in approach by public sector research investment is necessary to break this cycle.

Redesign Philanthropic Incentives and Constraints to Accelerate Impact

Americans are among the most philanthropic citizens in the world. Most of the dollars come from individual donors, and religion is the largest category of giving followed by education. Private foundation institutions large and small do significant and often extraordinary work, much of it behind the scenes and out of the awareness of the media or general public.

Nevertheless, our system of philanthropy must be updated to address the 21st century context of our urgent and unprecedented systemic crises. It is in fact one crisis that is at the same time economic, social, ecological, and political, threatening societal collapse. Yet the scale of philanthropy is inadequate and has not kept up with the scale of wealth generation. Furthermore, the ethos of much of our philanthropy remains a noble attempt at "problem solving" that is dealing with the challenges that neither the private sector nor the public sector is willing or able to confront. Well intended and in many cases impactful as it is, such problem-solving work is entirely different than making open ended investments in deep systemic change to address root causes. Rockefeller Philanthropy Advisors' "Scaling Solutions toward Shifting Systems" initiative is a hopeful start in this direction.

NEVERTHELESS, OUR SYSTEM OF PHILANTHROPY MUST BE UPDATED TO ADDRESS THE 21ST CENTURY CONTEXT OF OUR URGENT AND UNPRECEDENTED SYSTEMIC CRISES.

The scale of philanthropy must meet the scale and scope of the systemic change required. Bold, voluntary initiatives such as the Giving Pledge[34] are an important start. They are aligned with the reality that financial wealth must be recycled back into social, ecological and other forms of community-benefitting capital on a major scale, rather than transferred into dynastic family wealth of a privileged few. But structural policy adjustments are needed as well.

First, a steep estate tax above some threshold would encourage more voluntary pledges like the Giving Pledge. I recognize this is a political hot button, with the estate

34 https://givingpledge.org/

tax having lost popularity across the political spectrum. [35] But as with every policy recommendation in this paper, this suggestion arises from following the patterns of living systems principles no matter where they lead, not from any ideological belief.

In a regenerative context, the logic of a steep estate tax is overwhelming. Extreme financial wealth locked in the control of a fraction of one percent of humanity rather than being recycled into regenerating the sources of our true wealth, holistically understood, is in conflict with many of our living systems principles - Robust Circulation, Holistic Wealth, In Balance, Right Relationship, Empowered Participation. What is critical is not a tax rate, but a tax threshold, above which a full 100% estate tax would kick in.[36] Here again, a shared global philosophy on such an approach would greatly enhance enforcement. But the lack of such agreement is no excuse that a country like the United States cannot lead.

IN A REGENERATIVE CONTEXT, THE LOGIC OF A STEEP ESTATE TAX IS OVERWHELMING.

Second, public policy is charged with identifying and addressing the most pressing public interest issues. While far from perfect, such a process should extend to philanthropy as well. We don't want government directing all of our philanthropy dollars, but there is no reason that it shouldn't incent certain critical needs ahead of others, while closing loopholes and abuse. Research into renewable energy technology and human immune system health are obvious public interest priorities. Private art collections "open to the public by appointment" are an easy target and

35 https://capitalinstitute.org/blog/fix-dont-flush-estate-tax/

36 The debate over an estate tax is made difficult by the reference to it as a "death tax," and as double taxation on monies previously taxed that interferes with our freedom. These are understandable views when looked at individually rather than systemically. What we are interested in here is whole system health. So something that makes sense individually, may still be at odds with systemic health. For example, that's why society accepts speed limits on highways. Using our living systems principles as our guide, it is clear that all financial wealth above some threshold should be taxed at 100% rather than passed on to heirs, both for the health of society and the planet, and, many would say, for the health of the heirs. We can debate whether that threshold is $10 million or $100 million per heir. But I can't see how any larger number could align with our regenerative framework. The tax rate on estates below ten million (or whatever threshold is chosen) will also require a debate, but is of less systemic importance. For many practical reasons, I would favor eliminating it entirely. Such an aggressive tax above whatever threshold is chosen would of course stimulate a massive transfer of assets into private foundations as many would not trust government to use these resources effectively. Perhaps there should be some amount say twenty percent - of an estate that is not eligible at all to avoid the estate tax to ensure government gets its appropriate share of wealth created by the system. Regardless, such an increase in societies resources moving into philanthropic entities creates vast new opportunities for systemic change in alignment with a regenerative world if managed and governed responsibly and regeneratively.

should not qualify as philanthropy.[37] Nor should endowing a building at a prestigious college that just might be where one hopes their children will attend. In fact, why does any college with a multi-billion-dollar endowment qualify as a charity in the first place? The fractal nature of living systems would imply that we have a greater diversity of both foundations and recipients rather than resources concentrating in ever large pools at the top of the pyramid.

The potential flow of billions more into private foundations is a societal positive in the Regenerative Age. It can relieve the pressure that capital places on the planet and oppressed societies if invested regeneratively rather than for extraction, while at the same time addressing the real needs we have. It will also demand greater oversight and even new structural forms to ensure grant making activities are aligned with living systems principles and thus in service of a regenerative world, ie, the common good. Accountability of foundations to the common good should be seen as the appropriate price of the tax benefit.

Accountability of foundations to the common good should be seen as the appropriate price of the tax benefit.

Most important, accountability would mean breaking the grantor/grantee power dynamic that too often defines the relationship foundations have with the people they are set up to serve. Representation from recipients of grants should be embedded directly into the decision-making process, and more decision making pushed down to them, in alignment with the principles of "right relationship," "empowered participation," and "edge effect abundance."

True accountability will also require an entirely new approach to governance, and a new set of accounting principles and promulgations, aligned with living systems principles. Cooperatives would make an ideal organizational form for foundation decision making and governance, perhaps organized around targeted issue areas. We need a Philanthropy Accounting Standards Board (PASB) to parallel the Financial Accounting Standards Board (FASB) in the private sector. At a minimum, we should demand that at least a third of the directors of a private foundation larger than some threshold – say $1 billion - be truly independent who are qualified to represent the public interest as the stakeholder it is in large private foundations. Another third should represent the grantee community interests and perspectives. Such directors should be paid and treated with the respect such a role demands. Of course, a true cooperative model tackles these needs at the level of structure.

True accountability will also require an entirely new approach to governance

37 https://www.nytimes.com/2015/01/11/business/art-collectors-gain-tax-benefits-from-private-museums.html

Third, the perpetual foundation model is outdated and must be adapted to the current context of urgent systemic crises. Minimum annual spending requirements should immediately double to ten percent. And foundation charters should limit the life of any foundation to 20 years post the death of the primary benefactor. Existing foundations whose benefactors have already passed should be required to spend down entirely within fifty years.

THE PERPETUAL FOUNDATION MODEL IS OUTDATED AND MUST BE ADAPTED TO THE CURRENT CONTEXT OF URGENT SYSTEMIC CRISES

The combination of a steep estate tax above some threshold as discussed above and in the footnotes, combined with these more onerous requirements on private foundations would expand the impact philanthropy can have on the world's greatest challenges by a factor of at least five and likely much more, and in a timeframe that matters. At the same time, the egregious and dangerous systematic escalation of extreme wealth inequality would be stopped.

FOUNDATIONS SHOULD BE INCENTIVIZED TO INVEST 100% OF THEIR ASSETS IN ALIGNMENT WITH THEIR PHILANTHROPIC MISSION

Finally, foundations should be incentivized to invest 100% of their assets in alignment with regenerative principles" no matter the mission. Such an approach is already unfolding at some of the more forward thinking foundations such as the Heron Foundation.[38] Much work lies ahead with the "how" on this, but public policy could be supportive by clarifying what fiduciary duty means and does not mean with respect to investment portfolios of philanthropic foundations, freeing them to invest 100% behind their mission just as they are free to give grants. Incentives could be constructed to encourage such mission aligned investment over the conventional reductionist approach of separating the investment function from the mission driven grant making. In most foundations today, even after decades of discussion on the topic, the granting side of the foundation is entirely separate from the investment process. One policy shift is obvious. In order to retain the tax holiday on investment returns, a foundation should be required to demonstrate that an individual investment or an entire portfolio is either mission aligned, or responsibly aligned with regenerative principles. Otherwise it should pay taxes on investment income just like the rest of us.

The financial wealth exists and is likely continue to be created in ever more concentrated hands as technological change continues to accelerate. Since it's not going away anytime soon, our philosophy toward philanthropic purpose and responsibilities, its role in society, and a radical rethinking of accountability is essential to amplify philanthropy's immediate impact on our most pressing challenges, and improve its long-term systemic effectiveness. The goal of these policy shifts would

38 http://www.heron.org/intro-net-contribution

be to create a rapid, order of magnitude increase in the pool of philanthropic capital available to be recycled back into social and ecological capital, ecological capital, a systemic rather than reductionist approach to philanthropy, a much more aggressive rate of deployment for these resources, a vital shift in the power dynamic between foundations and the people utilizing these vital resources to do the work on the ground, and the activation of 100% of these assets in alignment with the public purpose mission. At the same time accountability to the common good would be established for the first time. Collectively, these changes would profoundly raise the scale, the importance and impact of the philanthropic sector in our economy and in society. In sum, we would begin to see a holistic approach to "systemic philanthropy" which is critical at this pivotal moment in history.

Establish Capital Investment Review Board (CIRB)

The final proposal to establish a Capital Investment Review Board (CIRB) is radical. A CIRB would review major real investment initiatives across the private and public sector alike to assess their regenerative merits. A threshold of materiality would be required, perhaps all real investments of $100 million or more over the project life in order to balance completeness with practical constraints.

As I reviewed in Act III, if there are limits to growth, then there must be limits to real investment since investment, along with consumption and government spending are the components of GDP.[39] Of course, there can be tradeoffs between the different components of growth. Vital investment can be accommodated by constrained consumption and so forth. We must also make moral choices regarding where we favor growth. Development in Africa can be accommodated with less consumption by the wealthy is a glaring realistic tradeoff in a world of limits.

The CIRB would be empowered to grade individual investment projects with respect to their alignment with regenerative principles and therefore their contribution to or detraction from a regenerative world. The CIRB could be authorized to red light any project that did not meet a certain minimum grade, and that minimum could be set to escalate over time. Project sponsors would therefore be incentivized to work collaboratively to raise the regenerative nature of their projects in order to get them approved. At first, the CIRB would simply grade projects while a process to approve or reject was worked on both within the nation and then as part of an international framework. Yes, this is radical. But it is reality in a world where growth is pushing us beyond the limits, and real investment, with its long-lived tail, plays such a critical role in defining the economic system of the future.

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39 By "investment" here we are talking about real investment in the real economy, not financial investment in existing financial assets.

Even if we narrow our focus to the energy transition, we quickly see how perplexing the challenge of investment allocation and consumption tradeoffs become. Indeed, we find a trap. The energy efficiency of fossil fuels, ignoring their catastrophic impact on climate, is higher than it is for most renewables, a concept known as energy returned on investment (EROI). The implication is we will need to crowd out brown investment — not only for fossil fuel energy, but for all non-essential investment and non-essential spending — in order to make room for green investment within the planetary thresholds as we understand them.[40] To avoid overshoot and collapse, society must embrace a scientifically determined threshold for our ecological footprint. We must create a democratically agreed method to allocate that threshold including regarding our real investment choices.[41] And we will need some form of regulatory body to oversee the implementation of these investment choices. Thus, the radical call for a CIRB.

To avoid overshoot and collapse, society must embrace a scientifically determined threshold for our ecological footprint. We must create a democratically agreed method to allocate that threshold including regarding our real investment choices.

Of course, this is a global requirement — but to be practical, it will need to take form within nations. I am recommending it be added to the mandate of the oversight role of the Federal Reserve Bank in the United States and implemented at the regional level. Many other structures are possible and perhaps preferable. Some would argue for implementation at the State level, to be more accountable to citizens. Whatever the design, coordination across all global CIRBs would be essential, just as global coordination among central banks today is essential. This is a tall order, I realize. But without such oversight, we will no doubt overshoot the capital investment “budget” that a finite planet implies. In other words, it’s not just an over consumption issue which is more easily recognized. Certain investments — the energy transition infrastructure in particular — are essential priorities, and we need a rational and equitable approach to making hard trade-offs when it comes to real investment as well as consumption.

Establishing the institution of a CIRB, and simply measuring capital investment by category with credible science based ecological implications, is the easy starting point. Imposing limits will be the hard work ahead. It will be dependent upon and responsive to the evolution of technology and future innovations.

Lest we get carried away with notions of techno-optimism to solve all our problems, let us posit a new free energy technology that captures clean energy from space, just

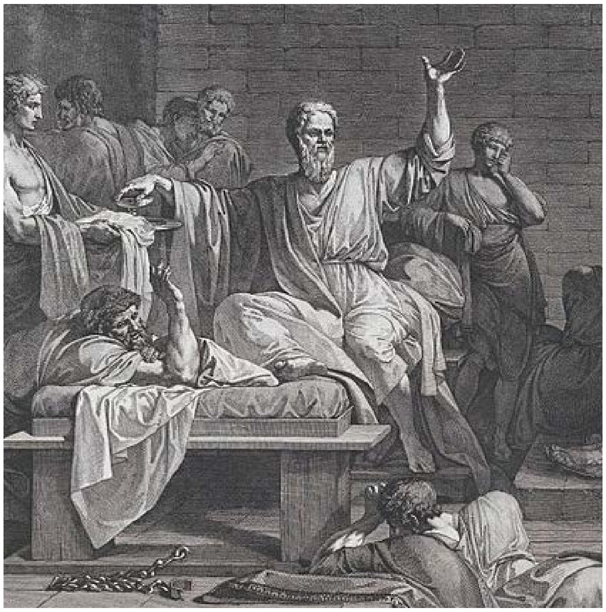
40 Sers, Martin R., Victor, Peter A., “The Energy-emissions Trap”, Ecological Economics (2018)

41 See “Context Based Sustainability,” a concept developed by Mark Mc Elroy https://www.sustainableorganizations.org/Essence_of_CBS.pdf

as a thought experiment. Such free energy technology would only accelerate our breeching of other planetary boundaries even faster, most importantly the human takeover of ever more landmass from other species. Our encroachment into ever more wild areas — as we are doing now with the burning of rain forests to grow crops and raise cattle for human consumption — would only accelerate the Sixth Great Extinction[42] already underway. With it, we can expect an increase the incidence of zoonotic diseases as a result of our invasion of still wild places where humans are not adapted. With this incursion comes ever more prevalent pandemics.

Limits to investment are a necessary feature of our new world, whether we like it or not.[43]

42 Kolbert, E. *The Sixth Extinction: An Unnatural History* (2014)
43 https://greattransition.org/publication/limits-to-investment



CONCLUSION

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*

The Death of Socrates, Pierre Peyron

Let us now return to where we began. In the *Four Acts of Finance for a Regenerative Age*, I have attempted to critique finance – its theories, practice, and, most important, its ideology – through a holistic, systemic lens, unbiased by political predispositions of the left or the right. This critique is built on a set of related assumptions, which is where we must return. These assumptions are as simple as they will be controversial or even heretical to many experts deeply engrained in the financial system itself. What they most certainly do not lead to is a call for more or less incremental change around the edges.

This booklet is a call to transform finance. That transformation will remove obstacles to the emergence of a healthy, regenerative economy, and will materially shrink the financial sector in the process.

Given my own decades of experience experience from the peak of global finance, and as an early pioneer in what is now called "impact investment," and now a decade plus of deep inquiry into this existential question for humanity, my hope and request is that my voice will earn the respect of a necessary pause, and a thoughtful hearing. By "stubbornly refusing the absolute truths" of many of my colleagues and friends in positions of power in finance that I never attained myself, I trust the worst outcome that may befall me from them is ridicule and scorn, but not execution.

The truth is, we are lost, nowhere more than in finance. My hope is that these ideas offer offer a dependable compass as an effective guide to those fighting for systemic reform. To be successful, these efforts must shift from responding to symptoms to boldly addressing root causes, no matter the implication to those in power.

The series of controversial and even heretical assumptions we have built our thesis on go like this:

> *Our economic system is irrefutably unsustainable because it violates the laws of physics.*[44] *Exponential, extractive, and undifferentiated growth of the material throughput - investment, production, consumption, and disposal of our waste stuff - of our global economic system on a finite planet cannot go on forever.*[45]
>
> *Scale matters. We have reached our moment of truth, where critical ecological thresholds have been breached. It's getting worse and worse every day, with reinforcing feedback loops like forest fires and melting permafrost releasing more greenhouse gases. Climate change is but one of many symptoms of this systemic reality.*
>
> *We are in desperate need of a new source of prosperity to replace extractive growth in order to avoid economic and social breakdown,*

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44 Rather than go down the entropy law rabbit hole and why it matters to our economic system, let me simply share one monumental consequence of the economics establishment seeming inability to understand the relevance to economics of the physical sciences, as if the economy operates apart from its laws and understandings. In late 2018, the Nobel Prize in economics was awarded to William Nordhaus of Yale University for his "DICE" model that calculated the optimal target for global warming was 3.5 degrees C because anything lower would cost too much in the form of lost economic growth! The decision by the Swedish Central Bank who awards the economic prize must have been reviewed by many esteemed economists. Such a conclusion speaks for itself, and the bankruptcy of much of mainstream economic thinking. The irony and tragedy is that Nordhaus built his entire reputation on his work on the economics of climate change. On the day he received his award, he is said to have admonished his Yale undergraduate students, "Don't let anyone distract you from the work at hand, which is economic growth." The media barely noticed the problem, such is the power of our growth driven worldview that must be "stubbornly doubted."

45 This observation was first made a half century ago by Kenneth Boulding, an economist and co-founder of General Systems Theory with his famous quip: "Anyone who believes that exponential growth can go on forever in a finite world is either a madman or an economist."

especially given the grotesque unequal distribution of wealth and health our present economic system has delivered, despite its many accomplishments.

We must look to the science of living systems – complex systems that have generated immeasurable and increasing abundance, including the miracle of life itself and by necessity, our modern economy that flows from it – as our guiding light. Such systems have sustained themselves and actually generated and accelerated ever more complex forms of life from life for long periods of time. They are also remarkably aligned with our wisdom traditions, particularly indigenous wisdom, that too have stood the test of time.

A leap from a belief in our failed economics to trusting in the patterns and principles of living systems science as a design premise for human economies is "radical," as in, getting to the root of the matter. It demands humility, and a belief in the power of intuition, synthesis, and extrapolation running ahead of empirical certainty. It values being directionally correct in contrast to being precisely wrong which is too often the case with our current economic models that are built on a foundation flawed assumptions and inacurate statistical models. It requires freeing ourselves from our Modern Age reductionist worldview and adapting a holistic and integrated worldview, in which relationships are more important than parts, and the whole is understood and honored as being greater than the sum of the parts.

It assumes that human beings are complex living systems, and that we are embedded in, and not separate from, the complex and interdependent living ecosystems that are in life giving balance, from the water cycle to the carbon cycle and much more, that provide critical ecosystem functions on this planet, life's "essential workers" without which there is no human race much less a human economy.

It understands that human beings and their environment are in fact one complex and interdependent living system, and therefore the human economy, too, must be part of that complex living system, and not separate from it. The "environment" is not a special interest. We are the environment.

As such, it stands to reason that if all living systems that sustain themselves for a long time exhibit common patterns and principles, then for the human economy to sustain itself over the long run, it too will need to align with such common patterns and principles.

Finally, and central to my arugment in this booklet, since finance is a sub-system of the real economy, it must operate in service to the real economy. Following the fractal nature of living systems, we must assume that finance too must operate in alignment with the patterns and principles of healthy regenerative systems. This truth of living systems design is non-negotiable. It is the premise of systemic health, without which we can't sustain modern society.

Holism Holds the Key to a New Narrative for Finance

A holistic understanding of economics rightly views the financial system as a sub-set of the economic system, embedded in it, and not separate from it. Finance's proper function is therefore clear: to work in service of the larger whole, the real economy. This is no different than a brain's work or a nervous system's work is in service of a whole person in a human system. Such a relationship demands a fresh look at finance from outside the arcane theories and practices developed within finance, often devoid of an appreciation for the more important wider context of interdependence. Such a look will inevitably lead to unconventional and controversial conclusions, quite distinct from a "within system" critique of finance.

This series of interconnected assumptions lays out a new narrative for the purpose of finance that is inextricably linked to the emergence of what I have called Regenerative Economics.[46] In this booklet in Four Acts, we have somewhat laboriously put finance in this context and then reviewed the six core functions of finance to remind ourselves what is the essence of finance, and what is expendable if it doesn't serve the true purpose of finance. These core functions are summarized as:

1. The transformation of savings into real investment
2. Financial investment/speculation
3. Credit creation
4. Real resource allocation via finance analytics
5. Risk management
6. Infrastructure

We then examined the five fatal flaws of finance. These flaws are all fundamental and a direct challenge to the unquestioned truths of conventional finance thinking.

46 At Capital Institute, we define Regenerative Economics as the application of nature's laws and patterns of systemic health, self-organization, self-renewal, and regenerative vitality to socio-economic systems.
https://capitalinstitute.org/wp-content/uploads/2015/04/2015-Regenerative-Capitalism-4-20-15-final.pdf

They include:

1. Ideology: a confusion of means and ends
2. Confusion of investment with speculation
3. The limits of markets
4. The agency problem of misaligned incentives
5. Limits to investment

Issues of ethics are reserved for the appendix because, while very real, they are of secondary importance in comparison with the systemic flaws. This point demands amplification.

The reckless greed, deceit, arrogance, and violence practiced by many leading financial institutions that led to the financial crash of 2008, with the full knowledge and encouragement of their leadership who would then defend such actions, even publicly in front of Congress, is far less damaging to the systemic health of our economic system in the long run than the collective impact of the five fundamental flaws outlined above.

Each of these flaws will be challenged if not dismissed by financial leaders and "experts" from within the system. This is where we must have the courage of our convictions to "stubbornly doubt the absolute truths of others." This is what sets my position apart from most other sophisticated critiques which focus primarily on the ethical breaches, whether willful and sinister (which they were) or simply the inevitable lapses of human judgment as many leading bankers would like us to believe. Regardless of perspective on intent, conventional critiques typically call for regulatory responses to ensure such mistakes "never happen again." My approach, on the other hand, is to call for systemic transformation to the very design of the financial system in order to create the conditions for healthy economies to flow more naturally.

We then moved to explore emerging solutions — an aspirational survey of the leading edge of practice moving in a regenerative direction. We examined the promise and limitations of applying Environmental, Social, and Governance (ESG) frameworks to financial investment. We looked at the promising field of impact investing and were inspired by the BCorp movement. We highlighted the Global Alliance for Banking on Values comprised of values driven banks that are committed to serving the real economy, and have proven doing so is just as profitable and more resilient than the extractive Wall Street bank business models.

Importantly, we examined money itself, and found great promise with experiments in complementary currencies. We even challenged another "absolute truth" about governments' ability and indeed necessity to run growing long-term fiscal deficits as we examined the essential possibilities unlocked by an understanding of Modern Monetary Theory. With this, the limitations imposed on EU countries that have given up their own sovereign currencies came to light. Similarly, we can understand the severe limitations of State budgets within the United States to handle the vast structural transformation ahead without material federal investment.

We did some thought experiments about what a New Investment Theory – Integral Investment Theory - that is aligned with the regenerative paradigm would need to look like, recognizing we are left with more questions than answers at this early stage of development. What if place, whether cities or ideally bioregions, became the organizing unit of analysis, or even a new "asset class" where integral investment can be implemented most directly? What if investment was about Integrated Rates of Return that demanded value be created and shared throughout the entire finance/economy and natural ecosystem, rather than internal rates of return where value is extracted from the system for the sole benefit of financial capital? We opened the door to a fresh examination of philanthropy and challenged the scale, structure, and accountability of this vital sector. We call for an urgent exponential scaling up of the sector to meet the urgent interconnected crises of this moment. We imagine what "systemic philanthropy" might look like whereby the focus is system transformation to address root causes rather than problem solving that is often reacting to symptoms.

Ultimately, we asserted that our modern capitalist system had efficiently converted natural capital and too much social capital of those not in positions of power into financial capital. As such "systemic philanthropy" coupled with a fresh look at the purpose of the public sector and private sector alike, both to recycle private capital back into the regeneration of vital living systems and for the regeneration of degrading human well-being and potential must become the Great Work of this age. This exploration is an invitation to fellow financial thinkers, leaders, and practitioners to co-create together a brand-new regenerative finance for a regenerative world.

THIS EXPLORATION IS AN INVITATION TO FELLOW FINANCIAL THINKERS, LEADERS, AND PRACTITIONERS TO CO-CREATE TOGETHER A BRAND-NEW REGENERATIVE FINANCE FOR A REGENERATIVE WORLD.

Finally, we turned to a policy agenda for genuine financial reform, one that begins with a vision as Dana Meadows instructed. That vision or narrative is laid out in the series of assumptions above, and accepted nothing about modern finance as beyond challenge, beginning with the scale of the financial system itself in relation to the real economy. Remember our principles "In Right Relationship" and "In Balance." Nor do we accept the extractive business models of the leading institutions of finance, where the phrase to "extract value" is not even questioned. Our approach demanded a holistic view of finance, with private sector finance fundamentally inseparable from the public sector, and monetary policy inseparable from fiscal policy. It finally led us to a ten-point agenda for financial reform, summarized here again:

1. **Curtail Speculation**
2. **Reduce Leverage**
3. **Regulate for Fractal Structure**
4. **Prioritize Business Formation**
5. **Reform the Tax System**
6. **Test Sovereign Money**
7. **Realign Fiscal Spending and Investment Priorities**
8. **Realign Public Research Investment**
9. **Redesign Philanthropic Incentives and Constraints to Accelerate Impact**
10. **Establish Capital Investment Review Board (CIRB)**

These policy recommendations will be fiercely resisted by the financial establishment. They can rightly be critiqued as "unrealistic." But without a clear vision of what is needed, we have no chance of attaining it. The real problem with our many failed efforts at financial reform that seem to lead to ever more and larger financial crises is a lack of imagination. If nothing else, this booklet is an intentional exercise in informed imagination.

THE REAL PROBLEM WITH OUR MANY FAILED EFFORTS AT FINANCIAL REFORM THAT SEEM TO LEAD TO EVER MORE AND LARGER FINANCIAL CRISES IS A LACK OF IMAGINATION.

The longer we resist dealing with the reality of genuine financial reform, the greater will be the damage done until at some point we reach the point of no return for society, and indeed for the human project. The stakes could not be higher. Fortunately, with the pressure rising, the emergence of regenerative finance green shoots is all around us and building as we also reviewed in Act III of this booklet. Our task now is to connect, nurture, reinforce, amplify, and enhance this emergence into a powerful new story of what's not only possible, but what is essential and ultimately inevitable.

This is the future of finance. This is the critical path to a Regenerative World.