

How we get out of this...

(one dangerous step at a time)²

The great strength of our economic system is how creative it is. Its creativity, though, is apparently being driven into a blind alley. What steers it creatively is how investors use the profits of existing businesses to develop the new businesses of the future, rewarding creative entrepreneurs with the chance to develop their ideas. At present that is clearly driving the economy to be very creative in doing exactly the wrong things for our future, though, in two major ways.

As a physical system it's necessary to creatively use the energy profits from consuming our non-renewable "seed resources", like cheap coal and oil, to build businesses that can run on something else... We're not doing that, but just accelerating the depletion of cheap resources. Presently "the market" (following it's one dimensional rule to maximize the growth of short term profits) puts long term returns close to last on the list of reasons to support business plans.

The second great problem with how financial choices steer the creativity of our economy is more hidden. It's that the investment cycle of using profits from old profitable businesses to build the new ones, our ongoing creative self-replacement scheme, is required to multiply. By taking profits and then adding them to investments by %'s the real scale, complexity and speed of change of how we exploit each other and the earth also increases by %'s.

To keep up with their profits being used to continually multiply investments in competition every business needs to keep up and provide profits for investors to continue adding to the cycle by %'s. If businesses don't continue keep up with it and provide a profit investors pull their money out of that business, and they have to quit. No doubt that automation of growth is somewhat of a miracle during times when the environment is increasingly responsive in a positive way, but is disastrous when the environment becomes increasingly responsive in a negative way.

The core problem is that a constant exponential rate of change is an explosively accelerating physical rate of change. The deep confusion seems to be that we define it culturally as a constant. The multiplier, the % rate of change, is though of as the magnitude, when it is actually the exponent of a magnitude. We should learn some math.

If all you do is marginally reduce the % rate of economic expansion, the exponent, you have not altered the explosive nature of the problem, nor the direction of change. You still have, physically, a life support system that is explosively increasing its scale, complexity and speed of reorganizing the earth and our own uses of it. That's the real problem.

² See preceding chapter "Inside Efficiencies" <http://www.synapse9.com/issues/InsideEfficiencies.pdf>
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I'll leave the details to the footnote at the bottom and following links, but what J.M. Keynes realized long ago is that there is only one real way to solve the problem. It very curiously corresponds to how it appears nature changes her complex growth systems, letting them stabilize and minimize their internal stresses as they become part of their environments. There's an apparent necessity of disconnecting the use of business profits from how investors have habitually used them to multiply business profits . Find something better to use them for.

If businesses aren't able to be profitable an economy dies. If business profits are continually used to force businesses to grow and exploit the earth exponentially, the business environment dies. What seems to be missing is that businesses and economies are made of and function more or less like living things. Somehow it appears that investors, as sophisticated as they make themselves out to be, simply don't know any better than to continue multiplying the profits they extract from living systems until it destabilizes them.

Throughout history there have been great eruptions of wealth directly followed by great collapses of the environments surrounding them. The frequency of occurrence, and the statistical relation between cause and effect have long been fairly evident. Investors in those explosions of wealth, though, have not really been aware that they were investing in living systems. They just saw ways to use efficiencies to multiply their profits in the businesses of the day, unaware it would destabilize the creativity of the living things doing it. So they continued to push them to multiply until it upset everything around them.

If investors were to no longer require business to multiply the scale of the economy's profits businesses could be far more responsive to their own longer term interests. They could also be much more responsive to public advocacy if not required to continually outdo themselves by leaps and bounds. What investors just need is some reason to use their profits in the interests of the living systems from which they extract them.

If you think of businesses as the cells of the economy, what we need to stop is continually doubling the number size and complexity of cells. What we need to keep is having the profits of the cells fund the creative design of new replacement cells, so how things work can continually improve. Achieving that *steady state of creativity* is what it would mean for it an economy to "mature". A mature economy would be relieved of pressure to grow and free to use its profits to be responsive to its constraints and evolve the way it takes care of itself.

The details, for running things is such a very different way, would indeed require lots of learning and many procedural and cultural changes. There also seem to be possible smooth transitions. Just knowing that there are innumerable examples of how nature navigates the same kind of transition that we have not really looked at closely, is a start. The general principle for the economy seems fairly simple. Investors "just" need to have fiduciary responsibility for the living systems they invest in. That's at once so completely backwards from what we do, and completely unavoidable, it might work as a new direction. At present it's legally treated as if investors have the absolute right to drain profits from the business environment till the environment fails, as it just recently did.

It may sound “magical” but it’s the kind of magic that nature somewhat casually displays all the time. How nature changes increasingly complex things to make them whole and simple again, at least provides a rich source of metaphors, if not exact formulas. All the systems of nature that mature to take care of themselves, in fact, seem to begin with a process of multiplying complexity with a creative use of discovered efficiencies. They then switch directions in what they use new efficiencies for, often making that switch at what would seem to be the very last possible moment.

For plants and animals the turn from compound growth toward stability displays perilous hazards and danger, a dramatically sudden switch in what they need to do. For animals the end of compound growth corresponds the abrupt end of their time in the safe world of the egg or the womb. For plants its the abrupt exhaustion of their seed resource they used up ever more rapidly, and abrupt transition to living off their environments.

The maturation transitions of the businesses that do, institutions and cultural organizations tend to be less hazardous. Still there’s a clear shift from multiplying their original concept to resolving their stable relations with their environments. There’s a fairly clear moment, when they “come of age”, and reorient their purposes. Maturing isn’t the end of change, or functioning, but just an end to the need for ever increasing complexity. A mature economy would continue to evolve, and use it’s profits to create new ways of adapting to its environment.

Today, thresholds of unrecoverable instabilities for our global life support system seem to be directly approaching. You know the long list, including things like our impending rapid decline of affordable energy resources. We’ve been using up our cheap seed energy source as fast as humanly possible! We do need to forestall the global energy bankruptcy that seems to predict, but doing so is in direct conflict with preventing global warming. We seem to need ALL the surpluses of the economy to be available for making constructive long term investments to make doing both at once physically possible. That necessitates a wholesale change in investment strategy, not unlike the one that natural systems seem to use in similar situations all the time. We are not now in a safe “holding pattern”, though, and realizing that is part of fundamentally rethinking what to do.

One place our sharp attention is needed is for noticing how the institutional plans for reducing our impacts on the earth were designed to suite the investment growth interests. That’s a mistake. Many of our sustainability strategies are designed to sustain exponential growth in our economy’s scale, speed and complexity of change, as their primary objective, and to reduce the impacts on ourselves and the earth secondarily.

It takes a sharp eye, but you can see that in how so many of the energy conservation plans are designed to assure competitive returns on investment and growth, as a precondition. Making sure to allow for that process of exceeding all limits, while generally not setting limits to anything but the exponential rate of increasing impacts, is the clue. Unfortunately those plans seem to include the energy conservation codes, high performance building standards and our strategies to reduce energy use to avert global warming. This is a very deep institutional problem.

The confusion here, as with misunderstanding the meaning of growth rates, is with the math. We’re just not a “numerate” culture. Now that growth has continued until the

absolute scale of impacts has become unsustainable we're still thinking of only needing to reduce their % rate of increase. We need to reduce the total amount, though, and reducing the compound rate of increase does not do that. That just reduces the exponent, while assuring that the total will continue to grow exponentially. It's confusing unless you have an intuitive feel for the difference between exponents and totals, and are sensitive to the turning point where that difference begins to really matter.

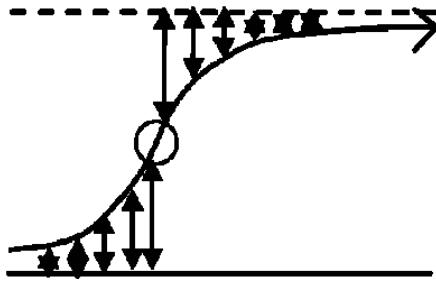


Fig. 2 A map of development, efficiency for growth and then maturity

Responsive self-investment systems, the kind that stop growing and mature by themselves, can be recognized by their histories of development. You can see the broad familiar pattern in fig. 2. That "S" curve is found in changes over time for any measure that is a stand-in for their rates or accumulations of energy flows. Development processes start with small simple steps of scale and increasing complexity, relating to the origin environment, that get successively bigger. Then they switch to developing by smaller steps, relating to their destination environment, and a new simplicity, in completing their development process. Examples are as simple as "making dinner", starting with initial planning, then more complex and energetic steps, to end by preparing to put it on the table and the small finishing touches that make it ready to eat. The same applies to business plans and projects of all scales. In every case the real value of starting up ever more complex tasks is in completing them. It's rare to have their value be in leaving them uncompletable.

Understanding the stages of natural system development also helps you understand why natural systems are cohesive, and to get beyond seeing them as a "jumble of parts without a theory". Our theories will always be inadequate, but identifying the natural subjects of our curiosity goes a long way to helping connect our limited theories with them.

It's sort of the ultimate efficiency, ending the growth process by finding a greater goal and purpose in making things whole³. What a savings! pfh

³ For the details see:

Economies that become part of nature, www.synapse9.com/issues/NaturalEconsLtr.pdf

A longer version, www.synapse9.com/drafts/NaturalEcons.pdf

Financial Models and discussion of our "Three Bubble Economy", [www.synapse9.com/concept\\$.htm](http://www.synapse9.com/concept$.htm)

General research methods www.synapse9.com and related writing www.synapse9.com/phpub.htm