



THE ECONOMIC PAMPHLETEER
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Limits to economic growth

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This is the first of two columns dealing with questions of economic growth. See the [second column](#) in the summer 2014 issue.

I am often asked why so few agricultural economists seem interested in sustainable agriculture or sustainable community development. Perhaps it's because unlimited growth is one of the

foundational assumptions of neoclassical economics. If there are no limits to economic growth, questions of sustainability are needless or pointless. Ecological economists challenge this assumption and call for a *steady-state economy*, meaning one “that develops qualitatively without growing quantitatively... maintained at a level that is both sufficient for a good life and within the

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Why did I name my column “The Economic Pamphleteer”? Pamphlets historically were short, thoughtfully written opinion pieces and were at the center of every revolution in western history. Current ways of economic thinking aren't working and aren't going to work in the future. Nowhere are the negative consequences more apparent than in foods, farms, and communities. I know where today's economists are coming from; I have been there. I spent the first half of my 30-year academic career as a very conventional free-market, bottom-line agricultural economist. I eventually became convinced that the economics I had been taught and was teaching wasn't good for farmers, wasn't good for rural communities, and didn't even produce food that was good for people. I have spent the 25 years since learning and teaching the principles of a new economics of sustainability. Hopefully my “pamphlets” will help spark a revolution in economic thinking.

assimilative and regenerative capacities of the [natural] ecosystem” (Daly, 2013). However, most economists seem to believe that human imagination and creativity is capable of finding a substitute for any natural resource we may deplete and finding a technological solution for any problem we might create — given adequate economic incentives.

One argument for unlimited economic growth is limitless *dematerialization*, meaning an infinite ability to extract more economic value from fewer natural and human resources.

As ecological economists point out, this conflicts directly with the law of entropy, which is the second law of thermodynamics. Everything of any use to us, including everything of economic value, ultimately depends on the usefulness of energy. According to the law of entropy, whenever energy is used to do anything useful, some of its usefulness is lost. Accepting the law of entropy, there are physical limits to dematerialization and thus limits to economic growth. Unlimited economic growth would require *ephemeralization*, a term coined by Buckminster Fuller, meaning the ability of technological advancement to do “more and more with less and less until eventually you can do everything with nothing” (Ephemeralization, 2013, para. 1). It doesn’t seem reasonable to bet the future of humanity on this possibility.

Another assumption seems to be that unlimited economic value could be created through reliance on renewable human intellect or personal services rather than nonrenewable natural resources — a service economy. However, the human processes of thinking, creating, or providing personal services are inherently dependent on biological energy. The human brain accounts for about one-fifth of the total energy needed to fuel the human body. Thus, the limits of dematerialization apply even to human imagination and creativ-

ity. The only remaining possibility for unlimited economic growth would be to rely on human imagination to create unlimited growth in the *non-material* economy — meaning *increases* in economic value that requires no *additional* physical materials or energy.

We need to keep in mind firstly that economic value is inherently *individual*, *instrumental*, and *impersonal* in nature. Thus, economic growth would need to be in things that are of perceived benefit to people as *individuals* that can be bought, sold, or traded

for something of greater *instrumental* value through *impersonal* markets. And then we need to remember secondly that the *growth* in economic value could not require additional human energy, which would violate the law of entropy. In other words, the unlimited increases in economic value would need to be achieved within the context of a “steady-state economy.”

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nonmaterial in nature. The same physical products are just worth more to their new owners. Anytime a new product is created that has *greater* economic value than the product it replaces, without using more physical or energy resources, the marginal increase in economic value is nonmaterial. The challenge is to sustain *unlimited increases* in *economic value* by creating ever-larger quantities of *nonmaterial* economic value.

In order to sustain unlimited economic growth, there first must be limitless growth in consumer demand for nonmaterial products. The number of consumers cannot grow indefinitely because human population must respect the limited physical carrying capacity of the earth. This means *individual* consumers must be persuaded or convinced that they need, or at least want, infinite

quantities of things of economic value that are nonmaterial in nature. In addition, these things cannot be purely *personal* or *non-instrumental* in nature, which would be of social and ethical value but of no economic value. An insatiable nonmaterial demand would require a relentless barrage of persuasive advertising, planned obsolescence, and conspicuous spending or hoarding of nonmaterial goods and services.

Second, to sustain this unlimited economic growth consumers must have the economic means of sustaining unlimited growth in demand. The creation of nonmaterial economic value would be the only source of the additional income needed to sustain unlimited growth in consumer demand. This means the increase in nonmaterial products would need to be *consumed* in large part, if not exclusively, by people who have an unlimited ability to *produce* nonmaterial products. In other words, there would need to be an infinite supply of the intellectual talent capable of producing new nonmaterial products of ever-greater economic value.

All of this would need to be accomplished without increasing the use of energy or claims on the natural or human resources needed to sustain the steady-state material economy. The ability to sustain economic growth would still depend on sustaining an adequate throughput of physical energy to sustain the human resources needed to continually grow the nonmaterial economy. Although the material fraction or percentage of the total economy would grow ever smaller over time,

the nonmaterial growth in productivity would still be dependent on the material fraction of the economy. Even if all of this were possible, the fact that we could do something doesn't mean we should try to should do it or would even want to do it.

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growth: persuasive advertising, planned obsolescence, and conspicuous spending and hoarding. Nonmaterial growth comes at a cost. For example, the prevalence of self-interest, narcissism, or greed would need to double every 25 years to sustain an annual growth rate of only 3 percent in nonmaterial demand. The wealth of those producing for the nonmaterial economy would grow exponentially in relation to those who support the steady-state material/energy economy. Economic inequity, social isolation, and psychological depression, which are

already problems, would grow without end. This seems a high price to pay to avoid limits to growth — even for economists.

References

- Daly, H. (2013, October 29). Top 10 policies for a steady-state economy [Web log post]. Retrieved from <http://steadystate.org/top-10-policies-for-a-steady-state-economy/>
- Ephemerization. (2013, December 31). In Wikipedia, The Free Encyclopedia. Retrieved April 13, 2014, from <http://en.wikipedia.org/w/index.php?title=Ephemerization&oldid=588472670>