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Ecological economics, degrowth, and institutional change

Kent A. Klitgaard [a,*], Lisi Krall [b,1]

[a] Department of Economics Wells College Aurora, New York 13026, USA
[b] Department of Economics State University of New York-Cortland Cortland, New York 13045, USA

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ABSTRACT

Ecological economics has made great strides in the understanding of how the human economy is embedded in a finite and limited biophysical system. However less progress has been made in understanding the internal dynamics of the economy that produce periods of slow growth, even in the absence of biophysical constraints. The real economy is a complex system, replete with myriad positive feedback loops. By looking at the economy from a systems perspective ecological economists can better understand the internal dynamics of a market system that lead to the periodic depressions and recessions that characterize "the failed growth economy." A non-growing or declining economy exacerbates formidable economic problems such as unemployment, debt, and poverty. Since the middle of the 20th century governments have pursued growth strategies to solve social problems. But the age of economic growth is coming to an end, driven by its own internal dynamics and by biophysical forces such as climate change and peak oil. Degrowth implies less, and the steady state implies less on a permanent basis. Ecological economists need to pay more attention to the implications of less for a market economy and the effects upon people under our present economic configuration.

1. Introduction

The age of economic growth is coming to an end. The mature economies of the industrial North have already entered the initial stages of the era of degrowth. This is evidenced by data that show overall economic activity has increased at a decreasing rate since the "Golden Age" of 1960s postwar capitalism turned into the era of stagflation in the 1970s. Despite the supposed revival of growth in the neoliberal age, percentage growth rates have continued their secular decline. In the United States real GDP growth was lower in the 1980s and 1990s than in the 1970s and lower still in the first years of the 21st century (Tables 1).

While percentage growth rates may have declined over the last five decades the absolute size of the economy, as measured by real gross domestic product (for all its flaws) has increased, more than tripling from 1970 until 2011. This creates a dilemma within our present institutional context. Absolute growth, which uses more resources, especially fossil fuel resources, destroys more habitat, and emits more carbon and other pollutants into the planet's sinks, has grown exponentially. At the same time, relative, or percentage growth, upon which employment depends, has fluctuated over the same decades and shows a downward trend. We are growing too fast to remain within the limits of the biophysical system. At the same time the world economy is growing too slowly to provide sufficient employment and there appears to be a secular decline at work.

Despite rapid and sustained rates of economic growth in many newly emerging market economies (e.g. Brazil, India and China) patterns of declining growth rates also exist for the *world* economy (Table 2).

The reduction in the long-term growth rates, especially for mature market economies, is not something we must contend with in the distant future. They have been occurring for decades. Neither are they simply the result of "misguided" policy, as growth rates have fallen in times of both liberal and conservative policy regimes. Rather, we believe the growth rate decline is embedded deeply within the institutional structure of the economy, as well as within biophysical limits. Clearly a better understanding of the complex dynamics of the interactions of the economic and biophysical systems is needed to provide important insights for the degrowth and steady-state agendas. While ecological economics has addressed ecological limits, it has not explored as fully the limits to growth inherent in a market system.

The analysis of biophysical limits has been the strength of ecological economics. Beginning with the work of Herman Daly, who placed the economy within the context of a finite and non-growing biophysical system, through the first 1997 text by Robert Costanza and colleagues, ecological economists have carefully delineated limits such as the climate change, the human appropriation of the products of photosynthesis, and biodiversity loss (Costanza et al., 1997). Subsequent analyses by Rees and Wackernagel showed that the human ecological footprint now exceeds the earth's biocapacity, and the *Limits to Growth*

* Corresponding author. Tel.: +1 315 663 5175(mobile), +1 315 364 3231(office); fax: +1 315 364 3227.
E-mail addresses: kentk@wells.edu (K.A. Klitgaard), Lisi.Krall@cortland.edu (L. Krall).
[1] Tel.: +1 607 592 5164(mobile), +1 607 753 2438(office); fax: +1 607 753 5983.

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Table 1
Growth rates in U.S. Real GDP.

Years	Average annual % growth
1930s	1.3
1940s	5.9
1950s	4.1
1960s	4.4
1970s	3.3
1980s	3.1
1990s	3.1
2000s	2.6

Source: Foster and Magdoff (2009).

studies by Meadows et al. concluded that human activity has overshot the carrying capacity and the scale of human activity is unlikely to be maintained into the next century. The work of many energy analysts (Campbell, 2005; Campbell and Laherrere, 1998; Deffeyes, 2001; Hall and Klitgaard, 2011; Hallock et al., 2004; Heinberg, 2005; Simmons, 2006) concludes that we are at or near the global peak of fossil hydrocarbons and future economic activity will be impacted strongly by more expensive and less available petroleum.

The second set of limits is internal and is to be found in the dynamics of the accumulation process, involving the complex structural interaction of production, consumption, and distribution. The internal limits that gear the economy toward both cyclical variation and secular stagnation have not been considered systematically by ecological economists. When the economy reached these limits historically the result has been a series of periodic recessions and depressions. Renewed growth has been the answer, just as it is now. If the system reaches its own internal limits at the same time the world reaches its external biophysical limits we will have a profound challenge because we need a way to facilitate decent standards of living when economic growth can no longer be the vehicle to maintain incomes and assure social stability. In the last instance, a system in overshoot can neither grow its way out of its inherent tendency toward stagnation, nor can it grow its way into sustainability.

We believe it is unlikely that the present system of capitalism, dominated by multinational corporations, globalization, speculative finance, and dependence upon fossil fuels, can adjust to the era of degrowth and remain intact as is. In order to devise an economy that meets human needs as it approaches both sets of limits, ecological economics needs to understand more fully the structural and institutional dimensions of the internal and external limits, as well as the interaction between the two. This is our challenge, and it is a difficult one. Ecological economics can better understand the necessary institutional configuration of the non-growing economy only by an improved understanding of the dynamics of growth and capital accumulation, because it is here that the inherent tendencies to stagnate and the resolution to stagnation are found.

2. The Standard Ecological Economic Model

The primary constraint to understanding the internal limits to growth is found in the acceptance of the framework where allocation, distribution and scale are disaggregated from one another, and in the belief that markets allocate efficiently, once adjusted appropriately for externalities, market failure, etc. While it is not our intention to be contentious and critical of a framework that many ecological economists adopt we believe this framework engenders a problematic map for understanding fully a mature market economy now running into both internal as well as external biophysical limits. While we have already highlighted many of our points of disagreement with this branch of ecological economics (Krall and Klitgaard 2011) it is nonetheless important to briefly restate them.

Table 2
Global investment, productivity, profit and GDP.

Indicator	1950s	1960s	1970s	1980s	1990s	2000–2002
US 500 TNC profit rate	7.71	7.15	6.30	5.30	4.02	3.30
Real global investment growth rate	n.a.	7.78	3.97	3.24	2.24	2.1
Global industry value added growth n.a.	n.a.	n.a.	3.36	2.59	1.92	n.a.
Real per capita global GDP growth	n.a.	3.19	2.11	1.27	1.05	1.00

Source: O'Hara (2006): 77.

The proposition that markets allocate efficiently is summarized clearly by Daly when he states: "the market, of course, functions only within the economic subsystem, where it does one thing: it solves the allocation problem by providing the necessary information and incentive. It does that one thing very well. What it does not do is solve the problem of optimal scale and optimal distribution" (Daly, 1996:50). Here allocation is separated from distribution and scale and the latter two, which are clearly more crucial, involve planning outside the market. Our belief is that markets are embedded in historical and institutional reality that we call market capitalism. Markets are more than just allocative mechanisms. They are also social institutions. There are no allocatively efficient markets that can be easily disentangled from this broader economic reality. Rather than treating markets as single purpose allocative mechanisms, we believe it is more productive to abandon the disaggregation of scale, distribution, and allocation and the premise of efficient allocation and treat markets as a component of an integrated whole called the Market System, or capitalism. What we really confront is a problem of institutional change. Many ecological economists believe that radical institutional change is impossible (and for many undesirable). Daly and Farley state: "We never start from a blank slate. Present institutions must be reshaped and reformed, not abolished. This imposes a certain gradualism….We have neither the wisdom nor the time to start over again without our most fundamental institutions, even if we could imagine alternatives." (Daly and Farley, 2004:362). We have only to look at Rapa Nui (Easter Island) to see that gradualism may not always be the best course of action. Gradually and without altering the basic institutional fabric of their day-to-day lives, the Easter Islanders eventually got to the point where they cut down the last tree. Perhaps more dramatic institutional change would have been in order. Under our present circumstances radical change means we have to begin by understanding the complex interactions of allocation, distribution, and scale. Disaggregating them presents an incomplete picture of the actual economy and a lack of focus upon the types of institutional change needed to achieve degrowth without mass unemployment and the attainment of a steady-state economy that meets human needs.

3. Historical Traditions of Alternative Economic Frameworks

The approach we advocate to understand how our economy might be reconfigured at this historical moment is to view the modern global economy as a complex and rapidly *evolving* interaction of production, distribution, exchange, consumption, and growth. We believe it is crucially important to make the distinction between the functioning of an individual market and the function of the Market (to use Polanyi's term) *as a System*. Complex systems entail not only boundaries, inputs and output, but also feedback loops. In the case of economic systems they also entail institutional configurations that include beliefs and agencies of economic organization such as laws and bureaucratic arrangements. Ecological economics is a vast improvement over mainstream economics because it embeds the economy inside a finite and non-growing biophysical system. This approach can be enhanced by a greater focus on market capitalism as a system.

Fortunately economists since the 1700s have written volumes to understand the nature and dynamic of market capitalism. Adam