The End of Growth: Adapting to Our New Economic Reality
Richard Heinberg

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Reviewed by Leland Beaumont

This book has such important implications for the future I plan to give a copy of it to my financial adviser.

The book effectively uses representative and systematic data to argue we are in ecological overshoot *and* economic overshoot. Either one is alarming; together they sound a critical alarm; if only it can be heard!

The author distinguishes between *economies*—the exchange of goods and services—and *economics*—a money-based model of an economy. Fractional reserve banking, debt-based currencies, and displacing externalities allow the two to diverge significantly. As a result, our financial accounting systems are giving us false signals.

We live in a world with ever-increasing levels of financial debt—public and private. We are also depleting the earth's natural resources, including fresh water, fertile soil, forests, marine ecosystems, biodiversity, fossil fuels, minerals, and pollution sinks. Since debt represents a promise of future repayment of labor and resources the book argues it is inevitable that the aggregate promises to repay will eventually exceed the available resources for repayment. In fact, that may have already have happened.

He argues convincingly that "we have created an economic machine that needs debt like a car needs gas," and that "the existing market economy has no 'stable' or 'neutral' setting: there is only growth or contraction."

Economics relies on several premises which are clearly false:

1) Growth can continue indefinitely,
2) Externalities can be safely ignored,
3) Natural resources represent income that increases as they are extracted rather than capital which depreciates as it is depleted, and
4) Resources can be substituted for one another with infinite flexibility.

He concludes "…the world economic system is held together largely by the belief and faith that it will continue to grow. It's a confidence scheme, in the purest sense."

Limits to ecological growth are well documented in the book: global marine seafood capture peaked in 1994, global oil production is probably past its peak, and we are approaching peak coal, peak water, and peaks for several key minerals. Unfortunately efficiency, substitution, innovation, and other technological magic are insufficient to close the gap between our present consumption and earth's limits.

As these limits are recognized more broadly, competition to retain a large slice of a shrinking pie will intensify. This is likely to unfold as increased struggles between nations, competition among world currencies, old vs. young, rich vs. poor, consumption and opulence vs. conservation and flourishing, short term opportunists against long-term thinkers, and along other lines of conflict. Planning can reduce the chaos while denial, delay, and panic will aggravate the disputes.

He concludes: "We have accumulated too many financial-monetary claims on real assets—consisting of energy, food, labor, manufactured products, built infrastructures, and natural resources" to ever be repaid. This leads to his rather bleak *default scenario*—his prediction of what will happen if leadership remains absent. It features various forms of *debt-jubilees*—schemes to discharge debt—with various big-time winners and losers.

Compared to other literature on limits to growth, I find these scenarios grimmer. I hope this is only his hyperbole, but I fear it is his expertise and candidness.

Our post-growth world needs to meet several criteria:

1) The economy must be steady-state and not one that relies on growth,
2) Renewable resources will be harvested at a rate slower than they are replenished,
3) Non-renewable resources will be extracted at declining rates, supported by increased rates of recycling,
4) Human population will stabilize at a level supported by these sustainable practices.

To help us imagine life after growth the last chapters describe several communities experimenting with sustainable economies designed to increase well-being and happiness rather than GDP.

The transition will be difficult, but the sooner we start, the better options we have. "All of the solutions to our growth-based problems involve some form of self-restraint," he states before asking, "The crucial question is, how serious will that crisis have to be to get our collective attention and force us to change our behavior?"

Unfortunately deniers addicted to unsustainable growth are unmoved by facts. I am concerned the well-presented facts and well-drawn conclusions of this important book will do nothing to influence those invested in preserving their obsolete and dangerous world views.