

Degrowth is Good Economics

An ecological economist explains why the hype around green growth is scientifically unfounded.



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I love sci-fi and it's very tempting to jump in feet first to discuss the growth-is-forever-possible-if-we-live-in-the-matrix argument from Noah Smith's latest piece, [The Metaverse and \(near-\)infinite economic growth](#). But I won't do that now. Instead, I

want to respond to the — less amusing and yet extremely important — twofold claim that (a) growth is currently becoming green in high-income countries (it is not), and (b) that the degrowth argument is not theoretically founded (it is).

So, it's a double disagreement. What I intend to show is that calling the growth of rich countries "green" is stretching the word beyond any useful meaning. True, there have been a few cuts worth learning from here and there, but nothing near the magnitude, consistency, and durability of the reduction one would need to make the pursuit of economic growth ecologically sustainable. The more we study these decoupling unicorns, the more we should realize that they are the exception rather than the rule.

“Green growth” is far from green.

The second point brings that battle into the realm of theory. Sure, decoupling doesn't work in practice, but does it work in theory? Some economists argue that growth can be greened but this is tautological because the very assumptions built into their theories and models state that natural resources only play a marginal role in production. I think these assumptions are wrong, and that if we were to change them, we would realize that “green growth” is far from being green.

Reality check about green growth

Noah Smith writes that *“in the past, GDP and resources use have always been tightly correlated. But this is just drawing a line through some data — it's not based on any deep theory.”* Let's start here: the line has been drawn many times — 1,157 times according to the systematic review of the decoupling literature conducted by Helmut Haberl and fifteen colleagues in June 2020. Findings: “we conclude that large rapid absolute reductions of resource use and GHG emissions cannot be achieved through observed decoupling rates.” Regardless of your theory and whether you think it is deep or not, this result is the most solid empirical fact we have: GDP and environmental pressures have until now always been tightly coupled.

Have we managed to decarbonize growth? Not really.

So, the author is mistaken when he writes that “*currently, rich countries are increasing their GDP while decreasing their resource consumption.*” First, the focus on *resource consumption* is too narrow. A “sustainable” economy in any meaningful understanding of the term must consider all the complex interactions it has with ecosystems, and not only carbon. The CO₂ cases of decoupling are ambiguous and worth debating (I’ll get to that in a second), but the decouplings of other forms of environmental pressures are more difficult to assess because they’re hardly studied (80 percent of all decoupling studies only focus on either primary energy or CO₂ emissions). What we do know is that the state of ecosystems is worsening at an increasing pace, with all measures of environmental degradations on the rise.

But let’s talk about carbon for a bit. Have we managed to decarbonize growth? Answer: not really. Don’t take my word for it, read the actual study that green growth advocates brandish as proof that decoupling is underway. What it really shows is that only 18 countries in the world (not many) have managed to reduce (the cut is minuscule) their CO₂ emissions (only one environmental pressures among many others) between 2005 and 2015 (a rather small period of time), with part of that decrease being explained by a slowdown in GDP growth rates (for a longer analysis of this study: Is green growth happening?). This is not *green* growth, this is *a-tiny-bit-kind-of-greener-than-before* growth — nothing worth sabering champagne.

Let’s look at a more recent study from last week: “Countries with sustained greenhouse gas emissions reductions.” The abstract announces triumphant findings: “24 countries have sustained reductions in annual CO₂ and GHG [greenhouse gases] emissions between 1970 and 2018.” One might say that 24 is better than 18, but out of these, only six — Sweden (-1.5 percent per year), Germany (-1.1 percent), UK (-0.9 percent), France (-0.8 percent), North Macedonia (-0.5 percent), and Belgium (-0.4 percent) — have experienced a continuous period of emissions reductions since the 1970s. That’s not many. And do you notice anything about these numbers? Well, they’re small. Very small. Too small to achieve any of the Paris Agreement warming targets, as the authors point out (and I find their targets quite optimistic because they assume that we’ll find a way to remove significant volumes of carbon from the atmosphere). Take away assumptions about these — as of now inexistent — Negative Emission Technologies,

and acknowledge the differentiated responsibilities of the global North towards climate change, and you realize that the needed yearly cuts are even more daunting, in the range of 10–15 percent.

Noah Smith's optimism is not only scientifically unwarranted, it is also dangerous. Imagine someone who would say in the midst of a pandemic that "*currently, rich countries are decreasing the number of positive cases,*" but then you discover that: (a) the statement only concerns a small, unrepresentative demographic, not all rich countries but only a handful of them, (b) that it only concerns one type of disease and ignore all others, © that the "currently" may have meant just a few days, when trends were worsening the rest of the time, and that (d) the rates of decrease of positive cases is marginal. This statement is reassuring but dangerously so because it assumes we're somehow going in the right direction at the right pace — we're not.

In fact, this statement is largely false. I say "largely" because it can become true, but only by being extremely vague, like the convoluted, legally jargoned sentences of tobacco lobbyists who would write that "smoking may, under certain specific and not generalisable circumstances, cause varying levels of damage to health." We know this is bullshit. This is why we now write on cigarette packs that *smoking kills*. I think that the same should apply to decoupling. Let's stop saying that "well, maybe, sometime, if this, if that, we may be able to achieve certain degrees of decoupling that might, to some extent, make growth more ecologically sustainable," and let's face an inconvenient truth: the growth of rich countries is not sustainable and probably never will be.

Ecological economics

It is time to admit that green growth optimists are losing the numbers game and that the burden of proof is now on their side. If you want to show that growth can be greened (or that wealth trickles down, or that Earth is flat), it's on you. Waiting for that, there is another game we can play, one about theory. According to Noah Smith, saying that "*GDP and resource use have always been tightly correlated*" is "*not based on any deep theory.*" This reminds me of the old joke where an economist says to a physicist: "sure it works in practice but does it work in theory?" Reality tells us that growth is not green, but that means nothing, because in some simplistic, Sims-like economic model, it *can* be green. But here is the catch: most economic models keep

nature out of their production functions, and so, of course, in theory, an economy can grow forever without impacting nature.

Nature holds non-negotiable market power and humans can only use whatever nature supplies.

What do the growth-sceptics have to offer against this theory? Let me introduce Romanian-American mathematician and economist Nicholas Georgescu-Roegen (1906–1994) who, at the beginning of the 1970s, laid out one theory so disruptive that it led to the creation of a new school of economic thought: ecological economics. His main idea, exposed in *The Entropy Law and the Economic Process* (1971), was that economic organization is a continuation of biological organization. Why? Because all machines are necessarily made of materials and use energy, and because all labour involves our biological bodies, which are also made of materials and use energy. The economy is — unavoidably — a *bioeconomy*, which means it is a subsystem of the larger finite and non-growing ecosystem that is the Earth.

The logical conclusion becomes inevitable: nature holds non-negotiable market power and humans can only use whatever nature supplies. This also means that the prosperity of the economy is fundamentally linked to that of ecology. In the same way that a healthy organ cannot thrive for long in a dying body, an economy will not prosper within a collapsing biosphere (or at least not for long). In terms of manufacturing, this means that certain factors of production are non-substitutable. Any human-made artefact is necessarily made out of natural resources such as materials and energy and so therefore cannot be a true substitute to it. “One cannot build the same wooden house with half the timber no matter how many saws and carpenters one tries to substitute,” wrote Herman Daly (another economist who has laid out a deep theory to explain why infinite growth is an ecological impossibility). Regardless of how ingenious you are and the budget of your R&D department, you will not be able to build a wooden house without wood.

If all economic activities require energy and materials, it means economic practices are unavoidably entropic (the second law of thermodynamics), which means they neither create nor destroy matter or energy but only transform it from a higher to a lower

quality. Consider this an inescapable law of diminishing returns applied to the economy as a whole. You can produce more for a time, and produce more efficiently to be able to keep producing for a longer period of time, but you cannot keep increasing production forever. This is because all of the materials and energy we use come from a nature that is fundamentally finite in its ability to provide resources and assimilate waste.

What kind of theory do green growth advocates offer in opposition to that? Well, not much, in my opinion. The core assumption of modern mainstream economics comes from a [1974 paper](#) from American economist Robert Solow where he integrated natural resources as an input into the neoclassical production function while assuming its perfect substitutability with human-made capital. “If it is very easy to substitute other factors for natural resources,” Solow writes, “the world can, in effect, get along without natural resources.” Now, economists who think this makes sense should spend a bit more time in their garden, realising that it is not “very easy” (or even possible at all) to substitute other factors for natural resources (good luck growing food with a high-tech, smart shovel but without soil, bees, and water).

So now, which theory should we choose? Should we trust experts who have developed their entire school of economics since the 1980s on the very question of how economy interacts with ecology, or should we rather ask a random neoclassical economist what they think on a matter they have only studied peripherally? I love both Nicholas Georgescu-Roegen and Robert Solow for different reasons, but picking Solow to understand the relation between growth and the environment would be like picking Zlatan Ibrahimović to play tennis — not the wisest pick.

What strikes me about Noah Smith’s piece is how uncertain he is. When he considers the fact that dematerialization might only be a temporary process, he writes “*Well, maybe. But maybe not. We just don’t know.*” And later, when he considers the possibility of sustained green growth, he writes that “*the answer to this question is ‘Who knows?’*” So, here you have someone who defends a position that runs against all available empirical studies and solid theoretical arguments. Noah Smith might not be sure, but we — ecological economists working on this issue — are: the current hype for green growth is scientifically ungrounded, both empirically and theoretically.

This article was originally published on Timothée Parrique’s website under the title, [A](#)

response to Noah Smith: Is degrowth bad economics?

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Post Growth Fellow, Tim Parrique, is a heterodox economist who is passionate about political economy and philosophy of science, and trying to reinvent the way we think about the economy.



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