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journal homepage: [www.elsevier.com/locate/resconrec](http://www.elsevier.com/locate/resconrec)

## Circular economy and growth: A critical review of “post-growth” circularity and a plea for a circular economy that grows

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## ARTICLE INFO

## Keywords:

Circular economy  
Sustainability  
“post-growth”  
Degrowth

The scholarly community that studies the circular economy (CE) has increasingly engaged in a critical examination of the interrelatedness between circular economy and growth. We estimate that as much as 10% of CE articles relate to this debate. The most recent addition to this debate, [Bauwens \(2021\)](#), accumulated > 200 likes on Twitter and > 10,000 impressions on LinkedIn – an amount of feedback usually only reserved for the latest report on CE by the Ellen MacArthur Foundation, a think tank dedicated to CE.

This perspective outlines why the calls for “post growth” circularity may be considered problematic. Herein, we do not aim to propagate growth fetishism, but rather a more balanced stance towards growth that views it as a possible outcome instead a target of CE. Throughout this perspective, we define “post growth” circularity as downscaling of the economy to make it consistent with biophysical boundaries via the application of circularity principles such as “reduce”, “reuse” or “recycle”. Thus, we conceptualize it as outlining CE as a means to degrowth as an end.

The call for “post growth” circularity is problematic for several reasons. The first reason is signaling. The community around CE, arguably the most vibrant sustainability research community these days, has been peculiar from its inception. Jumpstarted by the reports of the Ellen MacArthur Foundation, it continues to be significantly intertwined with practitioners; indeed, various of its authors publishing in peer-reviewed journals are not career academics, but pracademics and practitioners. Its success in business and policy circles rests upon the promise that the CE concept can reconcile growth and sustainable development – a promise that previous sustainability buzzwords (think of biomimicry, industrial ecology) have frequently not made, or at least not made this

prominently. Calls for “post growth” circularity may alienate practitioners, creating a scholarly community that loses its ability to influence the mainstream.

Yet such alienation may be necessary if “post-growth” is truly to be the aim of CE. This is to be questioned, though. Proponents of “post growth” circularity point out that increases in the global gross domestic product (GDP) have been tightly coupled with an increase in the size of the material footprint, reaching levels that are unsustainable. This is true. Yet already van den [Bergh & Kallis \(2014, p. 914\)](#) noted that “reaching a safe level of CO<sub>2</sub> emissions, given that we need to reduce these by at least 95 percent by 2050 [would require] to “downscale economy by a factor of 20 to 100”. Meanwhile, [O’Neill et al. \(2018\)](#) calculate, based on current relationships between GDP and resource consumption, that meeting even only basic needs for citizens would necessitate a level of resource use that is 2–6 times the sustainable level. While calls of the “post growth” scholars for the economy to be “small-scale and localized to primarily serve local communities’ needs” ([Bauwens, 2021](#)) may sound romantic and desirable at first sight, this may actually equate with a detour to the Middle Ages.

A shrunk economy as an end state may thus not be desirable and the process of shrinking it may not be any better either. As also noted by [Bergh & Kallis \(2014\)](#) on environment and growth: The main historical, large-scale experiments aimed at moving away from market capitalism, namely central planning by communist states as in the former USSR, Eastern Europe and China, certainly do not offer a good record in terms of clean production and environmental regulation — quite the opposite. Furthermore, a shrinking economy that is becoming more circular may also be one that provides fewer employment opportunities, particularly

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<https://doi.org/10.1016/j.resconrec.2021.106033>

Received 9 October 2021; Received in revised form 2 November 2021; Accepted 2 November 2021

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for those groups already marginalized. Thus, "post growth" circularity may result in an economy that is smaller and possibly even more circular, but not necessarily more environmentally, socially, and ultimately economically sustainable. This possibility of "dirty degrowth" is to be considered by proponents of "post growth" circularity (Bergh and Kallis, 2014).

Ultimately, even the proponents of "post-growth" circularity may agree that what is needed at least in the short-term is a CE that grows. After all, only circular business models that grow will be able to substitute their linear counterparts. Much promising technological development and innovation is to be found in the circular start-up community – developments which may help reconcile growth and sustainability (Henry et al., 2021). While circular companies that hyper-scale remain scarce, early evidence around circular start-ups, e. g. Henry et al. (2021), suggests, though, that those founding companies that revolve around circularity principles, are much more interested in growing these firms rapidly than entrepreneurs that are pursuing companies with sustainability aims, but not through the means of circularity. These circular start-ups deserve further examination as a promising avenue towards at-scale sustainability.

Once rapid growth of circular businesses has occurred, with these companies driving linear players out of the market, the economy may be, measured in GDP, smaller than its linear predecessor, if dominant products are ultra-durable and/or more resource efficient. This economy may also be larger, though. After all, consumers tend to re-invest savings induced by CE (think of savings occurring because of an ultra-durable smartphone that suddenly last 10 years). Zink & Geyer (2017) warn that these savings may be invested unsustainably, thus offsetting any sustainability benefits previously accrued (dubbed as the "circular economy rebound" effect). However, it is conceivable that these savings are re-invested sustainably (think of a weekend get-away at an eco-farm close-by), setting off a perpetuum mobile towards sustainability. We just do not know.

To ensure sustainable reinvestments, scholarly concern must not be focused on whether the economy grows or does not grow, but rather policies which aim at balancing environmental, economic, and social goals, and thus sustainability. In other words: Circularity is best considered as a means towards sustainability instead of a means towards

"post-growth" which is effectively meaning degrowth. Sound sustainability policies that employ circularity principles can help ensure sustainable market offerings en masse, and thus may help overcoming any circular economy rebound effect. They may help ensure that the economy's GDP, circularity, and sustainability are all growing at the same time – the original promise and ambition of the CE concept.

Arguably, it is fashionable these days to call for "post-growth" in the scholarly community around CE as well as in the wider sustainability research community, much more fashionable than taking the opposite stance. Yet such calls do not only risk alienating the fruitful discussion between scholars and practitioners, but they are also not underpinned by sound reasoning. An economy that has shrunk as well as one that is in the process of shrinking is not necessarily a sustainable one. Meanwhile, an economy that increases its GDP, circularity and sustainability at the same time is both desirable and conceivable. More scholarly research is needed on policies that enable a CE as a means for sustainability instead of what appears at times to be rather ideologically motivated writing on "post-growth".

#### Declaration of Competing Interest

The author declares that he has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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