



UNIVERSITY OF LEEDS

This is a repository copy of *Beyond green growth*.

White Rose Research Online URL for this paper:
<http://eprints.whiterose.ac.uk/164735/>

Version: Accepted Version

Article:

O'Neill, DW (2020) Beyond green growth. *Nature Sustainability*, 3 (4). pp. 260-261. ISSN 2398-9629

<https://doi.org/10.1038/s41893-020-0499-4>

© 2020, Springer Nature. This is an author produced version of an article published in *Nature Sustainability*. Uploaded in accordance with the publisher's self-archiving policy.

Reuse

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.



eprints@whiterose.ac.uk
<https://eprints.whiterose.ac.uk/>

Beyond green growth

Can economic growth be made greener, or must we look beyond growth to achieve sustainability? An important new study shows that the pursuit of “green growth” would increase inequality and unemployment unless accompanied by radical social policies.

Daniel W. O’Neill

It is one of the great debates in sustainability: green growth versus degrowth. Advocates of green growth argue that growth is necessary for economic stability and job creation, and that environmental problems can be solved by breaking the link between economic activity and its environmental impacts. Advocates of degrowth respond that the laws of physics make this link difficult to break, and that growth in GDP (gross domestic product) is no longer improving people’s lives in wealthy nations. A new article by Simone D’Alessandro and colleagues makes an important contribution to this debate by constructing a model that compares the outcomes of three different policy packages: green growth, degrowth, and a Green New Deal (Fig. 1). The authors find that although green growth may reduce greenhouse gas emissions, progressive social policies are needed to save green growth from rising unemployment and inequality¹.

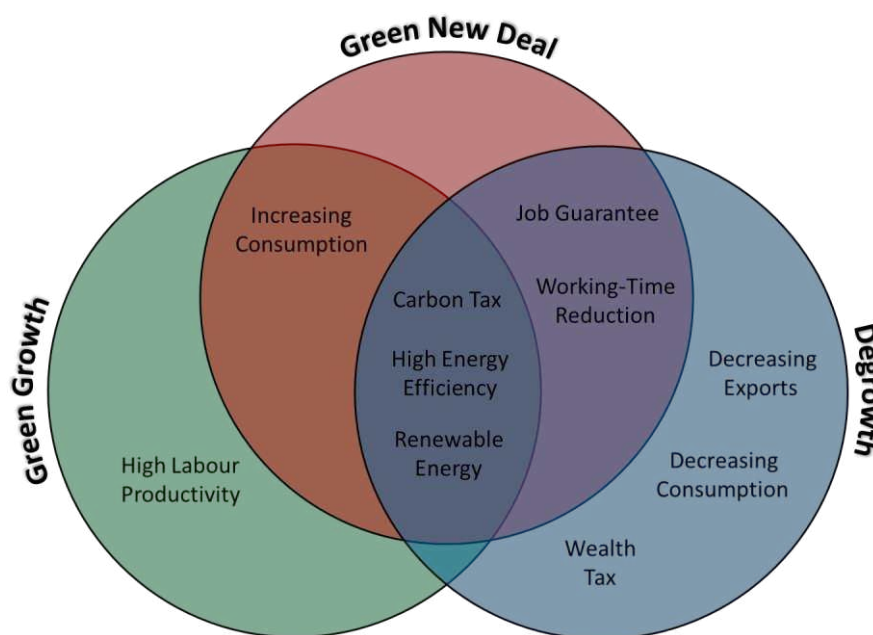


Fig. 1. Three policy packages (green growth, degrowth, and a Green New Deal) that are evaluated using a new ecological macroeconomic model. Some policies overlap between the packages, while others differ between them.

The study builds on recent advances in the emerging field of ecological macroeconomics^{2,3}. This field develops macroeconomic theories and models to analyse systems with interlinked economic, social, and environmental variables. A critical idea is that the economy is embedded within society, which is in turn embedded within the biosphere. Economic processes are therefore analysed in terms of flows of biophysical resources and social outcomes—not just in terms of flows of money, as in conventional macroeconomic models. Conventional macroeconomic models adopt an optimisation framework with a single goal (i.e. GDP growth). However, GDP is increasingly being seen as a poor indicator of progress, which does not account for many of the things that people value most⁴. Ecological macroeconomic models allow for multiple non-substitutable goals to be explored (e.g. sustainability, equity, and human well-being). These models have been developed to address issues such as the link between growth and inequality⁵ and the effect of climate change on financial stability⁶.

The *Eurogreen Model* developed by D'Alessandro and colleagues provides a valuable new analysis. The model evaluates three different policy packages (Fig. 1), in comparison to business-as-usual. It is parameterised for France, and runs from present day to 2050. The *green growth* package includes a carbon tax, an increase in renewable energy, and innovations that can improve both labour productivity and energy efficiency. The *Green New Deal* package includes the same environmental policies as green growth, minus the incentives for labour-saving technology, plus progressive social policies such as a state-sponsored jobs programme and a gradual reduction in the working week. The *degrowth* package includes all of the policies in the Green New Deal, alongside a reduction in both consumption and exports, and a tax on wealth.

The authors find that all three policy packages are able to significantly reduce greenhouse gas emissions. Both green growth and a Green New Deal come close to reaching the EU's Climate Action target. Degrowth achieves it. However, there are important trade-offs in each of the scenarios. Green growth reduces greenhouse gas emissions, but inequality and unemployment both rise. The Green New Deal dramatically lowers unemployment and reduces inequality, but at the expense of an increase in the government deficit-to-GDP ratio. Degrowth reduces emissions and inequality further than the other two scenarios, but it leads to a higher increase in the deficit-to-GDP ratio (because GDP decreases). In short, there is no win-win scenario.

These results have important implications. First, they suggest that a purely market-based green growth strategy is likely to have serious negative side effects. These side effects may be corrected by complementing environmental policies with strong social policies, such as working-time reduction, a guaranteed jobs programme, and a wealth tax. Second, the results suggest that degrowth can dramatically reduce environmental impact and lead to improved social outcomes (e.g. more leisure time, higher employment, greater equality), provided the appropriate policies are in place. Third, a Green New Deal, with an explicit focus on achieving a just transition⁷, may represent a compromise that advocates of both green growth and degrowth can support.

The Eurogreen Model makes a number of important contributions, but—like any model—it also has limitations. Importantly, the model does not assess whether the degree of decoupling assumed in its green growth scenario is actually possible, an assumption that has been challenged empirically⁸. Even if it is possible to decouple growth from greenhouse gas emissions, it may not be possible to decouple it from other environmental problems. Second, the degrowth scenario does not include a number of additional changes that have been put forward by degrowth authors, such as alternative business models, new measures of progress, or public money creation⁹. For example, central banks could potentially create money to help fund a low-carbon transition (as they created money to bail out the banks), which would reduce the government deficit¹⁰.

Ultimately, the important work of D'Alessandro and colleagues tells us that we need to choose our economic policies carefully. We cannot expect economic growth to deliver sustainability, or green growth to deliver social equity. If we want to achieve a sustainable and just society, then we need to move beyond the pursuit of growth, and target these outcomes directly.

Daniel W. O'Neill

Sustainability Research Institute, School of Earth and Environment, University of Leeds, UK.

e-mail: d.oneill@leeds.ac.uk

References

- 1 D'Alessandro, S., Cieplinski, A., Distefano, T. & Dittmer, K. Feasible alternatives to green growth. *Nature Sustainability* (2020).
- 2 Rezai, A. & Stagl, S. Ecological macroeconomics: Introduction and review. *Ecol Econ* **121**, 181-185 (2016).
- 3 Hardt, L. & O'Neill, D. W. Ecological macroeconomic models: Assessing current developments. *Ecol Econ* **134**, 198-211 (2017).

- 4 Stiglitz, J. E., Sen, A. & Fitoussi, J.-P. *Mismeasuring Our Lives: Why GDP Doesn't Add Up. The Report by the Commission on the Measurement of Economic Performance and Social Progress* (New Press, New York, 2010).
- 5 Jackson, T. & Victor, P. A. Does slow growth lead to rising inequality? Some theoretical reflections and numerical simulations. *Ecol Econ* **121**, 206-219 (2016).
- 6 Dafermos, Y., Nikolaidi, M. & Galanis, G. Climate change, financial stability and monetary policy. *Ecol Econ* **152**, 219-234 (2018).
- 7 Ocasio-Cortez, A. et al. *H. Res. 109 - Recognizing the duty of the Federal Government to create a Green New Deal* (U.S. Congress, 2019); <https://www.congress.gov/bill/116th-congress/house-resolution/109/text>.
- 8 Hickel, J. & Kallis, G. Is green growth possible? *New Political Economy*, 1-18 (2019).
- 9 D'Alisa, G., Demaria, F. & Kallis, G. *Degrowth: A Vocabulary for a New Era* (Routledge, New York, 2014).
- 10 Boait, F. & Hodgson, G. *Escaping Growth Dependency: Why Reforming Money Will Reduce the Need to Pursue Economic Growth at Any Cost to the Environment* (Positive Money, London, 2018); <https://positivemoney.org/publications/escaping-growth-dependency/>.

Competing Interests

The author declares no competing interests.