

Jason Hickel & Giorgos Kallis (2020) Is Green Growth Possible?, *New Political Economy*, 25:4, 469-486.

Shortened text

The notion of green growth has emerged as a dominant policy response to climate change and ecological breakdown. Green growth theory asserts that continued economic expansion is compatible with our planet's ecology, as technological change and substitution will allow us to absolutely decouple GDP growth from resource use and carbon emissions. This claim is now assumed in national and international policy, including in the Sustainable Development Goals. But empirical evidence on resource use and carbon emissions does not support green growth theory.

Examining relevant studies on historical trends and model-based projections, we find that: (1) there is no empirical evidence that absolute decoupling from resource use can be achieved on a global scale against a background of continued economic growth, and (2) absolute decoupling from carbon emissions is highly unlikely to be achieved at a rate rapid enough to prevent global warming over 1.5°C or 2°C, even under optimistic policy conditions. We conclude that green growth is likely to be a misguided objective, and that policymakers need to look toward alternative strategies.

The empirical data demonstrate that while absolute decoupling of GDP from emissions is possible and is already happening in some regions, it is unlikely to happen fast enough to respect the carbon budgets for 1.5°C and 2°C against a background of continued economic growth. Growth increases energy demand, making the transition to renewable energy more difficult, and increases emissions from land use change and industrial processes. Models that do project green growth within the constraints of the Paris Agreement rely heavily on negative emissions technologies that are either unproven or dangerous at scale. Without these technologies, the rates of decarbonisation required for 1.5°C or 2°C are significantly steeper than extant models suggest is feasible even with aggressive mitigation policies.

This conclusion changes somewhat if we adjust the baseline growth rate. All of the studies cited above project global GDP growth at 2–3 per cent per year. A lower rate of growth requires a lower rate of decarbonisation. A growth rate of 0 per cent requires decarbonisation of 6.8 per cent per year (for 1.5°C) and 4 per cent per year (for 2°C). There is no empirical evidence that 6.8 per cent can be achieved on a global scale, but 4 per cent is nearly within reach. In other words, it is empirically feasible to achieve green growth within a carbon budget for 2°C with the most aggressive possible mitigation policies if the growth rate is very close to zero and if mitigation starts immediately. This conclusion is in line with research by Schroder and Storm (2018), which finds that reducing emissions in line with the 2°C target is feasible (under optimistic assumptions) only if global economic growth is less than 0.45 per cent per year. This conclusion does not hold for 1.5°C, however; emissions reductions in line with 1.5°C are not empirically feasible except in a de-growth scenario.