

Green Growth or Degrowth?

Policies for navigating **Scylla and Charybdis**

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Green Growth: technological change is sufficient to achieve transition to carbon free economy. Green new deal with social buffers for pains of structural change.

Degrowth: should not be understood as essentially a program for public policy.

Demaria et al. (2013) argue that “[u]nlike sustainable development, [...] degrowth does not aspire to be adopted as a common goal by the United Nations, the OECD or the European Commission” (2013, p.192). Instead, it was conceived as a social movement and adapted in scholarly work, essentially calling for radical change.

According to Demaria et al. such change can be clustered around four potential strategies for degrowth:

- oppositional activism,
- building bottom-up alternatives
- research
- reformist action within existing institution

But there are 50 shades of economic growth between technological fantasies and degrowth utopia.

If growth cannot continue to achieve environmental sustainability, what about social sustainability?

Current relations of production barely produce enough growth to keep employment stable.



In order to think about questions of environmental and social sustainability, it is helpful to delineate where and how economic growth originates. After all, achieving economic growth retains the air of alchemy even in today's capitalist world.

The following list gathers some of the more important sources of economic growth:

- Division of labor (Smith)
- Profit motive (Ricardo and subsequent)
- Innovation and Competition (Marx and subsequent)
- Preferences, Technology, Endowments (Neoclassicals)
- Aggregate demand and distribution (Keynes and subsequent)

Each of these channels affect environmental and social outcomes, in addition to generating economic activity.

Policies for Green growth

Just to Wikipedia and search European Green Deal:

Clean Energy Climate neutrality by the year of 2050 by decarbonizing the energy system. The key principles include:

- to “prioritise energy efficiency”
- to “develop a power sector based largely on renewable resources”,
- to secure an affordable EU energy supply
- and to have a “fully integrated, interconnected digitalised EU energy market.”

Sustainable Industry to “empower citizens, revitalize regions and have the best technologies.” Key points of this policy area include

- boosting the modern aspects of industries,
- influencing the exploration and
- creation of “climate neutral” circular economy friendly goods markets (Sustainable products)

Building and Renovation targeting the process of building and renovation in regards to their currently unsustainable methods (e.g. material and upkeep) and promoting the use of energy efficient building methods such as climate proofing buildings, increasing digitalisation and enforcing rules surrounding the energy performance of buildings.

Farm to Fork strategy pursues the issue of food sustainability as well as the support allocated to the producers, i.e. farmers and fishermen. The program includes the next targets:

- making 25% of EU agriculture organic, by the year 2030.
- reduce by 50% the use of Pesticides by the year 2030.
- reduce the use of Fertilizers by 20% by the year 2030.
- ...

Eliminating pollution The ‘Zero Pollution Action Plan’ that aims to be adopted by the commission in 2021 intends to achieve no pollution from “all sources”, cleaning the air, water and soil by 2050

Sustainable mobility A reduction in emissions from transportation methods is another target area within the European Green Deal. Smart mobility intends to be implemented, fixing the emission standards for combustion-engine vehicles

Biodiversity strategy will be put forth in 2021 and include management of forests and maritime areas, environment protection and addressing the issue of losses of species and ecosystems are all aspects of this target area. The biodiversity strategy will be an essential part of the climate change mitigation strategy of the European Union. From the 25% of the European budget that will go to fight climate change, a large portion of that will be dedicated to restoring biodiversity and nature based solutions.

Policies for Degrowth

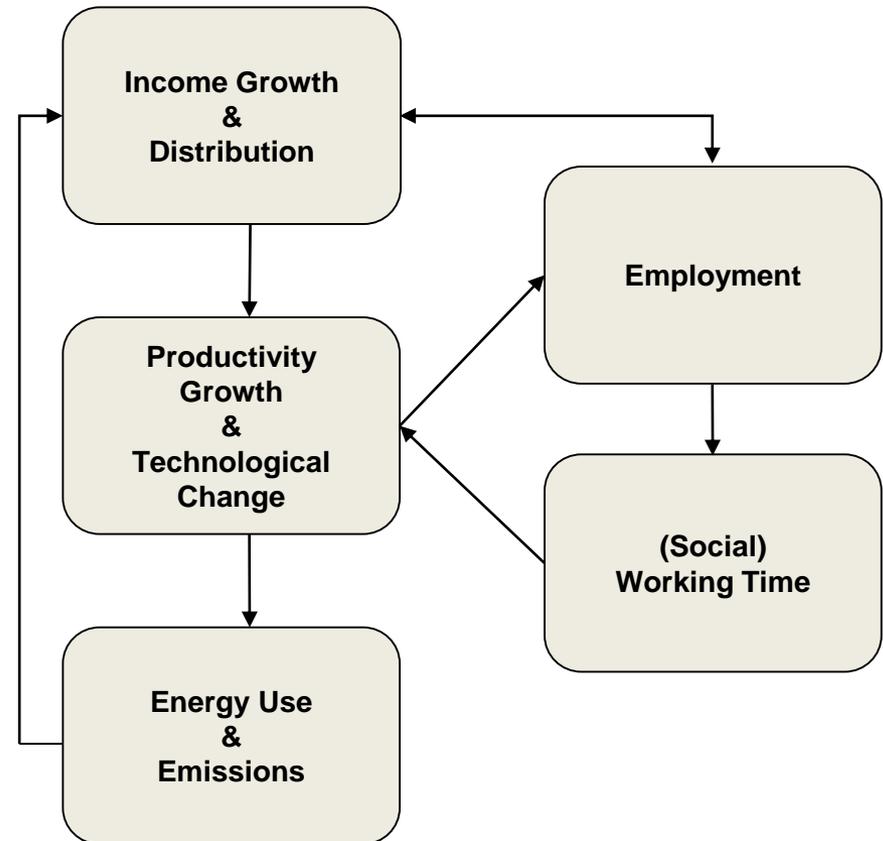
List of policies (top-down) with more than 5 mentions according to Cosme et al. (2017)

Types of activities: by R (regulate), T (taxation), I (invest/fund), and U (unclear)

Goal	Degrowth Proposal	# cited	Type
Environment	Limit/regulate advertising	7	R
	Promote organic farming/sustainable agriculture	5	I?
	Put caps on resource use and extraction (tradable or non-tradable) and waste disposal (CO2)	7 (4 CO2)	R, T
	Reduce energy consumption	11	U
	Reduce material consumption	12	U
	Tax resource use	6	T
	Invest in more renewable energy	6	I
	Create incentives for local production and consumption	11	R?
Social Justice	Create a basic/citizen's income	14	R, I
	Improve social security and investment in public goods to guarantee equal access to goods & services	10	I
	Promote the recognition & management of common goods	5	U
	Promote a fair redistribution of resources through redistributive policies of income and capital assets	17	R
	Implement redistributive taxation schemes	8	T
	Promote the shift of costs from labour to capital	5	R?, T?
	Encourage the reform of corporate charters and promote new ownership patterns	10	R?
	Create salary caps	11	R
Promote work-sharing and job-sharing	15	R?	
Transformation	Reduce working hours	21	U

Economic Growth, Distribution, and the Climate

- Model of Taylor et al. (2018)
- Integrated framework to study effects of climate policy on economic growth, labor productivity, employment, and distribution.
- Keynesian growth model where the short run matters in the long run, not just exogenous factors such as productivity growth, population growth, depreciation rate of capital, inefficiencies...
- The short-run demand and distribution relationship a la Goodwin is conditional on other variables, in our case ζ and u .
- Growth rate and income distributions are rather stable and reach a steady state in the case of absolute decoupling, i.e. green growth.
- Changes in social relationships and policy, e.g. increasing low wages or reduction in mark-ups.



The role of labor markets

Given the capitalist mode of production, employment is the most important source of income for most households. How could dynamics of both labor markets be introduced into the literature economic growth and climate change?

Following Goodwin's (1967) interpretation of Marx' reserve army argument: workers increase their target when unemployment is low, i.e. the employment rate is high.

$$\hat{w} = -\mu_1(\pi_{T_w} - \pi) + \mu_2\hat{p} + \mu_3\hat{a} = \mu_1[\pi - \gamma_0 + \gamma_1 e] + \mu_2\hat{p} + \mu_3\hat{a}$$

Firms want to maintain their target profit share in a similar manner and, when it is decreasing, adjust prices, pushing costs on to consumers:

$$\hat{p} = \tau(\pi_{T_r} - \pi) = \tau(\delta_0 - \pi).$$

The dynamic of the profit share thus depends on the employment rate, the growth rate and the level of the profit share itself.

$$\dot{\pi} = -(\hat{w} - \hat{p} - \hat{a})$$

These types of wage-price spirals have been studied extensively. Combination with growth model in Ederer and Rezai (2020).

A model

Static equilibrium	
Investment	$g = I/K = \beta_0 + \beta_1 u + \beta_2 r$
Consumption	$C = (1 - t_c)[(1 - s_w)(1 - t_w)Y_w + (1 - s_r)(1 - t_r)Y_r]$
Mitigation	$M = mK$
Aggregate demand	$Y = C + I + M + GV$
Depreciation	$D = (\delta_0 + \delta_1 G)K$
Labor income	$Y_w = W + MT = (1 - \pi)Y + MT$
Capital income	$Y_r = R = \pi Y - D - t_y Y$
Profit rate	$r = R/K = \pi u - \delta_0 - \delta_1 G - t_y u$
Dynamic Equations	
Capital stock	$\dot{K} = K(g - \delta_0 - \delta_1 G)$
Cum. Emissions	$\dot{CE} = [1 - \theta(m)]\lambda_1 \hat{a}^{\nu-1} Y$
Distribution	$\dot{\pi} = \pi(\hat{w} - \hat{p} - \hat{a}) = \pi\mu_1(\gamma_0 - \gamma_1 e - \pi) = \pi\mu_1(\gamma_0 - \gamma_1 \zeta u - \pi)$
Employment	$e = \frac{L_h}{hN} = \frac{L_h}{Y} \frac{K}{hN} \frac{Y}{K} = \frac{\zeta u}{h}$
Labor productivity	$\hat{a} = \phi_0 + \phi_1 g - \phi_2 \pi$
Auxiliary $\zeta = \kappa/a$	$\dot{\zeta} = \zeta(g - \delta_0 - \delta_1 G - n - \hat{a})$ $= \zeta[(1 - \phi_1)g - \delta_0 - \delta_1 G - n - \phi_0 + \phi_2 \pi]$

- General Taxes
 - Consumption taxes: directly reduce demand, borne by consumption, however with balanced budget: neutral
 - Production taxes (e.g. CO2 taxes, energy taxes, ...) reduce net profits and indirectly investment, borne by producer, with balanced budget: increase consumption; total effect on demand ambiguous
 - Income taxes: reduce work and profit income and demand, with balanced budget: increase demand, because $s_w, s_r > 0$
- Transfers (e.g. UBI) increase workers' income and demand, with balanced budget: reduce demand, because $s_w > 0$
- Environmental efficiency (e.g. energy taxes, CO2 taxes, ...) in order to increase energy productivity, i.e. ν falls, reduce impact on GHG emissions, macroeconomic rebound effect - higher capital stock & output, lower emissions in long-run
- UBI – labour market effects
 - target wage share rises: temporary increase in wage share, in the long-run reduction of employment rate
 - work time decreases: temporary increases in employment rate and wage share but no long-run effects
- Work time reduction
 - with wage compensation: immediate increase in employment rate and wage share but in long run only temporary effects
 - without wage compensation: immediate increase in employment rate, wage share rises, again only temporary effects

Thank you.

