Basic Income and Degrowth

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Based on presentations at the North American Basic Income Guarantee Congress, Silberman School of Social Work, New York City, 6/16-18/2017, and the Basic Income Earth Network Congress, Lisbon, Portugal, 9/25-27/2017.

Among the defenses of basic income available in the literature, some take a Keynesian approach, arguing that a basic income is a way to promote economic growth, and is superior to lowering interest rates, pumping money into banks, or encouraging capitalists to invest. Others start from the contradicting premise that growth is a problem for ecological reasons, and basic income is part of a solution for how to manage our economies fairly without relying on growth.

I start from what has been called the dilemma of growth (Jackson, 2009): If economic growth continues, it will bring about ecological disaster. But if economic growth stops (or declines substantially, or the economy contracts), there will be high unemployment and rising inequality.

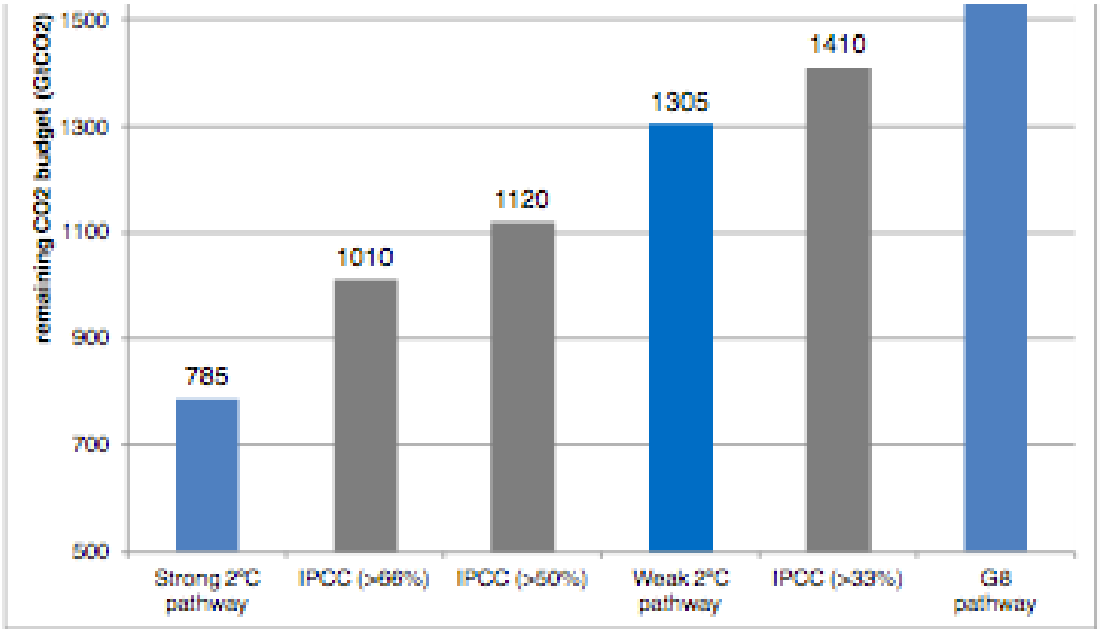
Pressman and Scott (2017) have elucidated the second horn of the dilemma in a particularly sharp way with reference to Piketty's second law:
$\beta=s/g$ (β = the long-run ratio of wealth to income; s=savings rate; g=growth rate)
"β determines the share of output going to workers and the share going to wealth owners. Moreover, because wealth is distributed much more unequally than income, a high value for β means that the annual gains from owning wealth go mainly to the very wealthy, and income inequality worsens."
With slow growth—when g decreases-- (never mind zero or negative growth), β "gets very large and begins to approach infinity….Inequality soars."

A second point: A zero-growth economy cannot absorb new labor, unless working hours are shortened and a constant quantity of labor is shared more widely. Even if native population growth and immigration drop to zero, if productivity improves, the quantity of labor is not constant, but declines, adding to worker displacement.

Third, in countless ways, government policy is premised on growth, and would need to be re-thought. Consider for example Social Security retirement pensions.[i] Because payouts exceed tax revenue, the solvency of the system is premised on economic growth. At zero growth, taxes would have to rise to 15 percent of wages, just to keep Social Security solvent.

Piketty's own proposal for addressing inequality under conditions of declining growth is an international wealth tax. He himself regards this as utopian. It becomes more imperative as growth slows, yet is likely to meet with more fierce capitalist opposition in a stagnating economy than in a growing one.

The imperative to slow growth, or managed degrowth, derives especially from assessments of the impact of climate change, and what is required to minimize it.



To avoid catastrophic effects of global warming, including sea level rise, increasing droughts, more severe storms, species extinctions, climate refugees and other social consequences of climate change, it is necessary to keep global warming below 2 degrees Centigrade (2C). The Paris Agreement commits participants to try to stay below 1.5C, because 2C may carry too high a risk of passing tipping points for collapse of ice sheets in Greenland and Antarctica, methane release from permafrost, and positive feedback from loss of Arctic sea ice. So when I focus on 2C in this paper, the reader should keep in mind that even this degree of global warming will bring serious risks.

To stay below 2C, it will be necessary to stay within a steadily shrinking carbon budget (see chart 1). Because CO2 remains in the atmosphere for a very long time, it is not enough to eventually reduce emissions. The sum total of emissions, not the amount in a given year, is what matters. The Intergovernmental Panel on Climate Change estimates that to have a more than 66 percent chance of staying below 2C, the countries of the earth must emit no more than 1010 Gt of CO2 from 2014. Eco Equity advocates a more stringent carbon budget of 785 Gt CO2. But even this "strong 2C pathway" has a "more unlikely than likely" chance of keeping warming below 1.5C.

A carbon budget of 785-1010 Gt CO2 from 2014 works out to about 3 tons of CO2 per person per year, over the 30 years to 2044. This rate of emissions will use up 80 percent of the budget in 30 years, leaving the remaining 20 percent for a tapering off to zero emissions in the last half of the 21st century.

For a reality check, note that the current global average is 5 tons per person. If global emissions were to remain constant 80 percent of the carbon budget would be exhausted by 2032. Unfortunately, global emissions are still rising. The five ton per person average masks large differences between countries. The US average is 16.4 tons. China and the EU each average 6.7 tons. India is at 1.6 tons, while Sub-Saharan Africa is at .8 tons. And of course within each country there are large differences in emissions per capita between rich and poor. With business as usual the entire carbon budget will be exhausted in less than 30 years, sooner the more emissions continue to rise globally.

What would be a fair allocation of responsibility for emissions reductions in order to keep the world on a strong 2C budget?[ii] One guiding principle should be **polluter pays**. This should be complemented by an **ability to pay** principle. There are many interpretations of each of these principles. For example, what is required by polluter pays varies depending on which date is chosen as the starting point for historical responsibility, who the agents are, and whether the agents are individual persons, or collectives like nation-states. Polluter pays can apply to all historical emissions of nation states dating back to the beginning of the Industrial Revolution. Using this measure the US is far and away the world's largest polluter. But many of the individual polluters are now dead, and were ignorant of the harmful effects of their pollution. Responsibility since 1950 would exclude past generations. Responsibility since 1990 would in addition address the concern about ignorance.

The Polluter pays principle alone is insufficient. Poor countries have a stronger claim to scarce carbon resources because without them they will find it much harder to rise out of poverty. Wealthier countries then should take on a responsibility exceeding that arising from their pollution, to make room for the poor to have some fair share of diminishing carbon emissions. But for purposes of this paper, I will ignore ability to pay, and rely only on polluter pays.

Country	Cell Definitions	Three Equity Settings											
		Low Equity Settings				Middle Equity Settings				High Equity Settings			
United States	Projected % of global RCI in 2025	19.3%				29.7%				41.0%			
	Support Contributor or Recipient	Support Contributor				Support Contributor				Support Contributor			
		MtCO2e	% reduction relative to:			MtCO2e	% reduction relative to:			MtCO2e	% reduction relative to:		
			1990	2013	2025		1990	2013	2025		1990	2013	2025
	Total Mitigation Fair Share	6,700	-90%	-91%	-92%	10,400	-149%	-146%	-141%	14,300	-212%	-207%	-195%
	Domestic Mitigation	4,000	-46%	-49%	-54%	4,000	-46%	-49%	-54%	4,000	-46%	-49%	-54%
	Internationally-Supported Mitigation	2,700	-44%	-42%	-37%	6,400	-102%	-98%	-87%	10,300	-166%	-158%	-141%

Results Table 1: Equity band for the United States, Strong 2°C pathway, Middle (Equal proportional) Domestic Mitigation estimate.

Eco-equity"s low equity settings (see Table 1) correspond to a polluter pays principle, with responsibility since 1990. To stay on a strong 2C pathway, the share for the United States of CO2 mitigation in 2025 would be 6700 metric tons of CO2 equivalent. If this were to be achieved through emissions reductions alone, the US would need to reduce its emissions by 90% below 1990 levels by 2025—a virtually impossible scenario. Fortunately the responsibility can be divided between domestic mitigation and internationally supported mitigation. The US could for example reduce its carbon emissions by 46%, still a steep target, but manageable, and it could fulfill its responsibility for the remaining 44% by funding mitigation elsewhere. For example because India is emitting less than its per capita allotment, India could be compensated for foregoing carbon emissions, and for developing on a more expensive but sustainable path.

Let's focus on the carbon emissions reduction side of this responsibility. How can emissions in the US be reduced by 46% by 2025? Could this be done by means of a carbon tax? Using the Carbon Tax Center's online calculator, and aiming for a 46% reduction by 2025, I found that the projected carbon tax would start at $35 per ton in 2017, and increase by $35 dollars per ton per year. (Incidentally if the revenue were used for dividends, the dividend per person would rise to $2668 per person per year, or $6884 per household.) This is a much more ambitious carbon tax than anyone has proposed. The problem with this projection is that it assumes that producers and consumers can rapidly adjust their behavior to such a rapidly rising tax. If they could, the carbon tax could lead to a sudden surge of green growth. But if not, the tax would simply depress demand for fossil fuels, leading to recession. We really don't know what would happen. But if there were political will for such an ambitious tax, it would be politically prudent to anticipate recession, and plan for it.

The green growth thesis depends on the claim that the carbon intensity of an economy – the amount of CO2 per dollar of GDP—can decline substantially while the economy grows. This is the vision of solar panels, windmills, and hydroelectric dams phasing in rapidly as carbon fuels are abandoned, and eventually producing enough energy for their own production and maintenance as well as other energy needs.

Total emissions are a function of carbon intensity, income per person, and population. Using the Ehrlich equation Tim Jackson (2011, 78) estimates how much carbon intensity would need to decline in order to reach emission reduction targets, given various assumptions about population and economic growth.
C (**CO2emissions**)= P (**population**) x $/person (**income** as GDP per person) x gCO2/$ (**carbon intensity**), or concisely:

C = P x $/person x gCO2/$

There is no other way to bring down emissions than by reducing population, reducing income, or reducing carbon intensity.

Carbon intensity has declined by 0.7% annually since 1990. But **population and incomes have grown**, so

C = 1.3 + 1.4 – 0.7 = 2% annual growth

Assuming future population growth of .7 percent (the amount corresponding to projections of a world population of 9 billion by mid-century), and the historical rate of decline of carbon intensity, to stop emissions from growing,

0.7 + **0** - 0.7

In other words, **Income growth would have to stop** to keep emissions from rising further.

With a continued 1.4% income growth, by 2050 CO2 emissions would be 80% higher than 2009, and the world would have long since blown past the 2C target.

With continued 1.4 percent income growth, carbon intensity would need to decline annually **by triple** the amount it has declined annually since 1990, **just to keep emissions from rising further**. Of course, the challenge is not only to keep emissions from rising, but to bring them down rapidly.

To achieve 4.9% annual emissions reductions,[iii] there would need to be a **7% annual** reduction in carbon intensity, **10x** the reduction rate annually since 1990.

Jackson notes that this does not take into account fairness toward the developing world. To allow "the world's 9 billion all to enjoy an income comparable with EU citizens today, the economy would need to grow 6 times between now and 2050, with incomes growing at an average rate of 3.6 per cent a year…. [necessitating] pushing down the carbon intensity of output by **9** per cent every single year for the next 40 or so years" (Jackson 2011, 80).

If we also allow for growth in the developed world of 2 percent annually, "carbon intensity must fall by over **11** percent every single year" (Jackson 2011, 81). Is it possible to decrease carbon intensity by 7-11 percent annually?[iv]

Could there be, for example, a 7 percent annual shift from carbon fuel to renewables, as part of the process of de-carbonization? Starting from where we are, if we could replace 7 percent of carbon fuel with renewables in the first year, and reduce carbon emissions by the same amount annually, the economy could be carbon free in 14 years (in 2031 if starting in 2017).[v]

However, even the most ambitious scenarios project more than twice that time for a transition away from fossil fuels. Consider two influential studies published in the Proceedings of the National Academy of Science.

Jacobson et al.,[vi] have argued that is technically and economically feasible across all sectors of the economy of the contiguous US, to achieve a 100 percent reliance on wind, water, and solar energy *by 2050-2055*. That's closer to 30 years, not 14. And critics regard this study as excessively optimistic.

In a review of the work by Jacobson et al., critics conclude:

"In our view, to show that a proposed energy system is technically and economically feasible, a study must, at a minimum, show, through transparent inputs, outputs, analysis, and validated modeling (13), that the required technologies have been commercially proven at scale at a cost comparable with alternatives; that the technologies can, at scale, provide adequate and reliable energy; that the deployment rate required of such technologies and their associated infrastructure is plausible and commensurate with other historical examples in the energy sector; and that the deployment and operation of the technologies do not violate environmental regulations. We show that [Jacobson et al.] do not meet these criteria and, accordingly, do not show the technical, practical, or economic feasibility of a 100% wind, solar, and hydroelectric energy vision."
The critics think that "an 80% decarbonization of the US electric grid could be achieved at reasonable cost," however not by means of wind, water, and solar alone.

"With all available technologies at our disposal, achieving an 80% reduction in GHG emissions from the electricity sector at reasonable costs is extremely challenging, even using a new continental-scale high-voltage transmission grid. Decarbonizing the last 20% of the electricity sector as well as decarbonizing the rest of the economy that is difficult to electrify (e.g., cement manufacture and aviation) are even more challenging. These challenges are deepened by placing constraints on technological options."
The authors favor including among the options, nuclear power, biofuel, and carbon capture and storage.

Given the magnitude of the threat of climate change, one might imagine speeding the transition at "unreasonable" cost, but then any surplus for growth will be threatened. And then we are back to slow, zero, or negative growth.

[Some of the problems with the Jacobson proposal mirror problems with the "flow" in the transition to fossil fuel "stock".[vii] Getting off stock and back to flow may involve also reverting to the slower growth of the pre-fossil fuel era.]

None of this proves the impossibility of green growth, but it does suggest that the burden of proof is on the green growth advocates to show us how this can be done, in the limited time that our carbon budget allows. And if we are serious about mitigating global warming, we have to give serious attention to slow or zero growth, or even degrowth.

Basic income in a degrowth regime

In an economy with low, zero, or negative growth, it becomes necessary to address property ownership, and the distribution of fixed or declining national income. In a growing capitalist economy, social peace is maintained, as capital accumulates, if jobs are plentiful and wages rise or at least do not fall. With zero growth, capital accumulation grinds to a halt, or it continues at the expense of lost jobs and lower wages. This accords with Piketty's analysis. At very low growth rates, even modest returns on capital investment will lead to growing inequality, with a rising share of national wealth going to capital rather than to labor.

Counteracting the inequality—and corresponding poverty -- requires either taxation and transfer, or redistribution of wealth. Redistribution of the capital wealth-- of stocks and bonds-- equally to all citizens, in the form of per capita shares, would yield a modest partial basic income (Roemer).[viii] If extensive enough, such redistribution takes us from capitalism into a kind of market socialism.[ix] The same income distribution can be achieved through taxation and transfer, if the requisite levels of taxation are politically feasible. Transferring ownership to workers is another way of broadening ownership; but without compensating policies, this excludes the unemployed and marginally employed

from a share in the wealth. On the other hand, a basic income provides a source of capital for the creation of worker cooperatives.

However the shift in wealth and income is brought about, a basic income can facilitate work time reduction and work sharing. With an income floor, it becomes possible for each person to worker fewer hours, and thus to spread a smaller amount of paid employment over a larger population.

The flatter the income inequality, the less important are positional goods—those goods that are needed because others have them. Then the same or even superior quality of life can be maintained with a lower level of absolute income and consumption. To illustrate with an example, if everyone else on the road is driving large SUVs, I need an SUV for safety in the event of a possible collision. If everyone else is driving a compact electric car, I am just as safe in a compact electric as I was with an SUV in a road full of SUVs. But my consumption of material and fuel is less.

This example also reveals that the path of greater equality cannot be pursued through thousands of individual decisions. If only I purchase the compact, I will increase my risk of injury. We need to power down, and let go of positional goods, together. That coordination requires some level of planning, but we should not jump to the conclusion that a Soviet-style command economy is required. Even a significant and rising carbon tax is an expression of a political decision to shift away from carbon, and it will drive many consumers toward smaller vehicles. But as my discussion of a carbon tax suggests, this alone is probably not enough to bring about the desired end, in a politically acceptable manner. Degrowth through shock therapy is not likely to survive democratic contestation. Additional measures, including regulations and subsidies, can further steer markets in the desired direction. But given the pace of change that is required to stay below 2C, this will not be a gradual transition. It will require coordination across many sectors and aspects of our lives, and it will require consensus building in support of such coordination. The needed consensus is particularly challenging, because it does not take existing consumer preferences for granted, but instead requires us to think about how to live well with less. A basic income affords some economic security in a process fraught with uncertainties. And it might be seen as part of a compact we make with each other, to make sure no one falls below the floor, in exchange for willingness to commit to a decades-long process of transition.

Degrowth: good ecology, bad politics?

Any politician running on the platform of reducing economic growth is likely to lose. The immediate costs of recession are too great, and the uncertainties surrounding climate change are just enough to sow doubt and wishful thinking and empower the nay-sayers. So what are we to do? We need to imagine our politics as an educational process that unfolds in stages. We begin on common ground with the advocates of green growth. We aim for the most robust carbon fee and dividend policy we can get. All along, we educate about how this will not be enough. But whatever we do will be better than doing nothing. Our hope must be that as people get on board with carbon pricing, they will open up to

the broader vision of a carbon-free, steady state economy, with all that that entails. When that is fully fleshed out, it is not dystopian at all. Business as Usual brings us to dystopia. Degrowth is a readjustment of priorities, consuming less, but living better.

References

Pressman, Steven and Robert H. Scott, III. "Thomas Piketty, Growth, Distribution and the Environment." In Peter Victor and Brett Dolter (Eds.), *Handbook on Growth and Sustainability*. Cheltenham, UK: Edward Elgar, 2017: pp: 356-371.

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[i] This example was given by Steve Pressman, in a panel discussion at the NABIG Congress, New York City, 2017. The annual deficit in retirement is funded by taxes. Over 75 years, the deficit has averaged annually 2.7 percent of wages taxed. Taxes need to rise assuming 2 percent growth, to close the deficit. If growth slows to 1.4 percent, as Piketty expects, the deficit annually will be 6.3 percent of wages. With zero growth, this deficit becomes 15 percent of wages. At $10 trillion of wages, this is $1.5 trillion a year, just to keep Social Security solvent. Lifting the wage cap won't solve the problem.

[ii] The position I am taking on global climate justice is similar to that of Simon Caney, and also Eco Equity, giving weight both to polluter pays and to ability to pay.

[iii] Jackson is working with IPCC Fourth Assessment targets, and in 2009, so the reductions would need to be higher today. Thus Jackson's estimates must now be regarded as understating the scope of the problem.

iv For a critique of Jacobson, see https://www.nytimes.com/2017/06/20/business/energy-environment/renewable-energy-national-academy-matt-jacobson.html *Fisticuffs Over the Route to a Clean-Energy Future* Eduardo Porter, ECONOMIC SCENE NYT, JUNE 20, 2017. And the full article, Evaluation of a proposal for reliable low-cost grid power with 100% wind, water, and solar Christopher T. M. Clacka,b,1,2, Staffan A. Qvistc , Jay Aptd,e, Morgan Bazilianf , Adam R. Brandtg , Ken Caldeirah , Steven J. Davisi , Victor Diakovj , Mark A. Handschyb,k, Paul D. H. Hinesl , Paulina Jaramillod , Daniel M. Kammenm,n,o , Jane C. S. Longp,3, M. Granger Morgand , Adam Reedq , Varun Sivaramr , James Sweeneys,t, George R. Tynanu , David G. Victorv,w, John P. Weyants,t, and Jay F. Whitacred. http://www.pnas.org/content/114/26/6722.full.pdf

[v] 7 percent annual reductions of course would be decreasing absolute amounts, as the total from which reductions are subtracted also decreases annually. 7 percent annual reductions would result after 40 years in emissions of 5.2 percent the amount in year 1. Thus, Jacobson, et al., projecting a 100 percent reliance on renewables in all energy sectors over 35-40 years, must envision more than 7 percent reduction in emissions. Author's calculations.

[vi] Jacobson MZ, Delucchi MA, Cameron MA, Frew BA (2015) Low-cost solution to the grid reliability problem with 100% penetration of intermittent wind, water, and solar for all purposes. Proc Natl Acad Sci USA 112:15060–15065; and Jacobson MZ, et al. (2015) 100% clean and renewable wind, water, and sunlight (WWS) all-sector energy roadmaps for the 50 United States. Energy Environ Sci 8:2093–2117.

[vii] Andreas Malm, Fossil Capital: The Rise of Steam Power and the Roots of Global Warming (New York: Verso, 2016).
[viii] John Roemer, A Future for Socialism. If corporate and non-corporate wealth had been nationalized, and dividends paid roughly equally to all adult citizens, each citizen in the United States would have received a dividend averaging at least $1200 per year in the 1980s. Adjusting for inflation (x2.29) that's about $2750 in 2017. Roemer's estimate excludes the financial sector and farms.
[ix] A modest step in this direction is the creation of citizens' capital accounts as recommended by Karl Widerquist (Widerquist and Howard, 2012b).