

Fighting the climate crisis need not mean halting economic growth



[Joseph Stiglitz](#)

The shift to a green economy can spur innovation and prosperity if we change the quality of growth

Mon 9 Dec 2019 09.52 EST Last modified on Mon 9 Dec 2019 11.21 EST



Wind turbines and solar panels. The world could meet the Paris agreement's goal of limiting global warming to 2C in a way that enhanced living standards. Photograph: Alamy

It is clear: we are living beyond our planet's limits. Unless we change something, the consequences will be dire. Should that something be our focus on economic growth?

The climate emergency represents the most salient risk we face and we are already getting a glimpse of the costs. And in "we", I include Americans. The US, where a major political

party is dominated by climate-change deniers, is the highest per capita emitter of greenhouse gases and the only country refusing to adhere to the 2015 Paris climate agreement. So there is a certain irony in the fact that the US has also become one of the countries with the highest levels of property damage associated with extreme weather events such as floods, fires, hurricanes, droughts and bitter cold.

At one time, some Americans even hoped that climate change might benefit them. Maine's coastal waters, for example, would become swimmable. Even today, a few economists still [believe](#) that there is not much to worry about, so long as we limit the increase in average global temperature to 3-4C, compared with the 2C limit set by the Paris agreement. This is a foolish gamble. Greenhouse gas concentrations are projected to be at their highest level in millions of years and we have nowhere else to go if we lose.

Studies suggesting that we could tolerate higher temperatures are deeply flawed. For example, because appropriate risk analyses are systematically omitted, their models do not give sufficient weight to the probability of "bad outcomes". The greater the weight we assign to the risk of bad outcomes, and the worse those outcomes are, the more precautions we should take. By assigning little weight – far too little weight – to very adverse outcomes, these studies systematically bias the analysis against doing anything.

Moreover, these studies underestimate the non-linearities in the damage functions. In other words, our economic and ecological systems may be resilient to small changes in temperature, with damage increasing only proportionally to temperature, but once climate change reaches a certain threshold, the increase in damages accelerates relative to the rise in temperature. For example, crop loss becomes serious as a result of frosts and droughts. Whereas a below-threshold level of climate change may not affect the risk of frost or drought, a higher level increases disproportionately the risk of these extreme events.

It is precisely when the consequences of climate change are large that we are least able to absorb the costs. There's no insurance fund to draw upon if we need investments to respond to large increases in sea levels, unforeseen health risks and migration on a massive scale as a result of climate change. The fact is that in these

circumstances, our world will be poorer, and less able to absorb these losses.

Finally, those who argue for a wait-and-see approach to climate change – that it's a waste of money to take large actions today for an uncertain risk far in the future – typically discount these future losses at a high rate. That is, whenever one takes an action that has a future cost or benefit, one must assess the present value of these future costs or benefits. If \$1 50 years from now is worth the same as \$1 today, one might be motivated to take strong action to prevent a loss; but if \$1 50 years from now is worth 3c, one wouldn't.

The discount rate (how we value future costs and benefits relative to today) thus becomes critical. Donald Trump's administration has in fact said that one wouldn't want to spend more than roughly 3c today to prevent \$1 loss in 50 years. Future generations just don't count much. This is morally wrong. But the do-nothing advocates, ignoring all the advances in public economics over the past half-century that have explained otherwise, argue that economic efficiency requires it. They are wrong.

We must take strong action now to avoid the climate disaster toward which the world is heading. And it is a welcome development that so many European leaders are spearheading efforts to ensure that the world is carbon neutral by 2050. The [report](#) of the High-Level Commission on Carbon Prices, which I co-chaired with [Nicholas Stern](#), argued that we could achieve the Paris agreement's goal of limiting global warming to 2C in a way that enhanced living standards: the transition to a green economy could spur innovation and prosperity.

That view sets us apart from those who [suggest](#) that the Paris agreement's goals can be achieved only by stopping economic expansion. I believe that is wrong. However misguided the obsession with ever-increasing GDP may be, without economic growth, billions of people will remain

without inadequate food, housing, clothing, education, and medical care. But there is ample room to change the quality of growth, to reduce its environmental impact significantly. For example, even without major technological advances, we can [achieve](#) carbon neutrality by 2050.

But it won't happen on its own and it won't happen if we just leave it to the market. It will happen only if we combine high levels of public investment with strong regulation and appropriate environmental pricing. And it can't, or won't, happen if we put the burden of adjustment on the poor: environmental sustainability can be achieved only in tandem with efforts to achieve greater social justice.

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