

Testimony of Joseph E. Stiglitz
Before the U.S. Senate Committee on the Budget
“The Cost of Inaction on Climate Change”

April 15, 2021

Thank you for this opportunity to share with you some of my concerns about the large economic costs and huge risks of not taking strong actions now to deal with climate change, and the large benefits of doing so.

Some of the downside risks are already apparent. In one recent year, the magnitude of destruction associated with extreme weather events—which will inevitably occur more frequently, with ever more devastation as a result of climate change—was more than 1.5% of GDP, effectively wiping out more than 60% of the growth of that year.¹ But this is only one dimension of what is occurring: Rising sea level will put much coastal property under water, destroying homes and property values. Forward-looking markets have already begun to price this in—but still far from adequately.^{2 3}

Recent studies have documented the adverse effects of climate change on health.⁴ We pay for this in multiple ways, including higher health care costs and a less healthy population, which means a less productive workforce. But there is no way to accurately monetize the shorter life spans and the increased morbidity.

Of course, there are actions we can take that can offset some of these adverse effects, but it will take effort and resources. It would be far better to devote these efforts and resources to

¹ <https://www.climate.gov/news-features/blogs/beyond-data/2018s-billion-dollar-disasters-context>

² <https://anderson-review.ucla.edu/is-the-1-trillion-coastal-housing-market-a-future-financial-crisis/>; http://real-faculty.wharton.upenn.edu/benkeys/wp-content/uploads/~benkeys/Research_files/Keys_Mulder_SLR_Exec_Summary.pdf

³ It's almost nowhere to be found in current home prices, mortgage insurance rates, or guarantee fees in the secondary mortgage market (<https://www.nytimes.com/2019/09/27/climate/mortgage-climate-risk.html>). The implications are discussed below.

⁴ https://health2016.globalchange.gov/low/ClimateHealth2016_FullReport_small.pdf ;

increasing living standards rather than adopting defensive measures. As the old adage put it, an ounce of prevention is worth a pound of cure.

There are, of course, some sectors, some parts of our population, some locations that will be particularly hard hit. During the past year, we have seen the inequities associated with Covid-19. Those associated with climate change are equally severe, with people at the bottom of the income ladder often bearing the brunt of the costs, with fewer resources to respond. But there is an additional dimension of inequity that speaks to our future: While Covid-19 disproportionately affected older Americans, climate change is a risk that we impose on our children and grandchildren—on the future of our country. It is understandable why younger Americans, including those not yet of voting age, have been among the most vocal about climate change.⁵ Many in this Congress have worried about the magnitude of the financial debt that we are bequeathing to future generations. But when there are high return assets to match that debt—investments in R&D, in infrastructure, in education—we bequeath them a stronger country. If we were talking about a company, we would highlight the increased net worth. The same reasoning should apply to a country. But if we leave them a world marked by environmental degradation and resource depletion—a world in which they will have to confront climate change and its consequences—we are truly bequeathing them a debt, a real deficit, which risks substantially lowering their standards of living.

Risks

Let me spend a few moments discussing the real risks our economy and society face if we do not take stronger actions than we have so far. We have been treating truly scarce resources, our environment, our water, our air, as if they were free. But economics teaches us that there is no such thing as a free lunch. We will have to pay the check someday. And delay is costly. Taking carbon out of the atmosphere is far more expensive than not putting it into the atmosphere. A smooth transition is far less costly than the one we will surely face if we do not take action urgently.

In 2008 we saw the financial destruction that came about as a result of the sudden readjustment in the pricing of one part of our housing market. The failure there would have brought down our

⁵ Including taking legal action. See the so-called Children's suit, [*Juliana vs. the US*](#)

financial system if governments had not acted forcefully. A full accounting of the costs to our societies over the succeeding years suggests that they were in the trillions of dollars. There will be a repricing of carbon assets. This I firmly believe. Carbon assets, such as those associated with coal and oil companies, do not today adequately reflect the realities of climate change. The longer we delay dealing with climate change, the larger the necessary adjustments will be, and the greater the potential for huge economic disruption—an economic disruption that could make the 2008 Great Recession look like child’s play by comparison.⁶ The danger of a crash is particularly acute for the U.S. economy, given that large U.S. banks are the largest financiers of fossil fuel.⁷

The insurance industry is heavily exposed, too. Over time, I would expect that they will be more careful in providing coverage—and that means more Americans will have to manage these risks on their own. And ultimately, we know what that means: When large calamities occur, as seems inevitable, the government will pick up the bill. This is a huge hidden liability on the government’s balance sheet.

Opportunities

Economics has, for good reason, been called the dismal science. The scenario of doom and gloom that I have painted is, unfortunately, all too real. But I want to end on a sunnier note. Doing something about climate change could be a real boon for the economy.

Too often, critics of taking action point to the job losses. Change is costly. But change provides opportunity. I am also firmly convinced that the opportunities afforded by addressing climate change are enormous. The number of jobs that will be lost in the old fossil fuel industries are dwarfed by those that will be created in the new industries. The value created in the new industries will also dwarf the value of the stranded assets in the fossil fuel and related sectors. As just two examples: the number of installers of solar panels already is a multiple of the number of coal miners; the auto company with the highest valuation today is Tesla.

⁶ For a discussion of the systemic risks associated just with the property market noted above, see <https://greatdemocracyinitiative.org/wp-content/uploads/2020/07/Climate-and-Housing-Report-Final-Copy.pdf>.

⁷ <http://priceofoil.org/2021/03/24/banking-on-climate-chaos-2021/>

The current focus on changing to a green economy is already stimulating enormous innovation, innovation that holds out the promise of significant increases in standards of living. The price of renewable energy has been plummeting, and in many areas outcompetes fossil fuels. The drive for a greener society is stimulating the design of new buildings and new ways of doing agriculture, which turn out actually to save resources, particularly if we value them appropriately.

Our country especially has much to gain, because innovation is a key comparative advantage. If we are ahead of the game—rather than a laggard—we will develop technology that will be in demand around the world. If we are behind the game, we will pay a high price. It is almost inevitable that other countries will demand cross-border adjustments that will put our companies at a disadvantage.

Government has an important role in enabling, facilitating, and encouraging the transition to a green economy. One might say we are in good luck: The deficiencies in public investment over the past decades has made it imperative that we undertake such investments now; and we can make those investments “green” investments. The investments themselves will create an enormous number of jobs, stimulating the economy and banishing to the past discussions of secular stagnation that have abounded for the past two decades. They will also crowd-in private investment. Basic research and technology investments by government, for instance, provide the foundations for investments by the private sector. We saw that in the case of the internet; we saw that in the case of the vaccines that were produced with such rapidity in response to Covid-19. And we will see it with these green investments as well.

More To Be Done

There is much more to be done to protect the economy from the risks I have described.⁸ For instance, we need immediately to end fossil fuel subsidies and require full disclosure of climate risks—both the risks of physical damage and the financial risks. Markets on their own don’t provide adequate disclosure, necessary both for the efficient allocation of scarce capital and for protecting investors. We need to change statutes governing fiduciary responsibility to mandate

⁸ See, for instance, J. E. Stiglitz, “Addressing Climate Change Through Price and Non-Price Interventions,” *European Economic Review*, Vol. 119, pp. 594-612, October 2019. Accessible at: <https://www.sciencedirect.com/science/article/pii/S001429211930090X?dgcid=author>

looking at these long-run risks, and especially where government is at risk, as in government insurance pension schemes. When the government is providing insurance or finance—whether it's through FDIC or through Fannie Mae—we as taxpayers need to be apprised of all these risks; or more pointedly, we shouldn't be taking on these risks. We shouldn't be insuring banks that make loans that put our planet at risk. We also know that when all is said and done, the government will pick up the pieces when there is systemic financial fragility—and that's why it's imperative that we start assessing, and regulating, systemic climate risk.

We have long been aware that in certain key areas there may be deficiencies in the provision of adequate finance. Economists have explained why that's the case, and governments around the world have stepped into the breach. There is, I believe, the need for the founding of a national infrastructure bank and for seeding the creation of community, state, and regional banks to facilitate green investments. We should never again allow the deficiency in infrastructure, which I referred to earlier, to be built up.

Social Cost of Carbon

Within the economy, within companies, and within government, prices help guide decisions. That's why assigning a near-zero price to resources that are scarce is such a bad mistake, and leads to such bad outcomes. We need to be aware of the social cost of carbon. Unfortunately, the interim social cost of carbon that was arrived at was much, much too low. If used as a basis for guiding the economy, it would result in temperature increases of 3.5 to 4 degrees C.—temperatures we have not seen in millions of years, with untold risks that the international community has rightly shied away from.⁹ We need to employ a significantly high social cost of carbon, accompanied by regulations, and public investments that will enable us to deal with risks that have rightly been called existential.¹⁰

⁹<https://www.lse.ac.uk/granthaminstitute/news/economists-warn-against-biden-administration-underestimating-the-social-cost-of-carbon/>

And N. Stern and J. E. Stiglitz, THE SOCIAL COST OF CARBON, RISK, DISTRIBUTION, MARKET FAILURES: AN ALTERNATIVE APPROACH Nicholas Stern Joseph E. Stiglitz Working Paper 28472, January, 2020 (https://www.nber.org/system/files/working_papers/w28472/w28472.pdf)

¹⁰ See Nicholas Stern, J. E. Stiglitz and Commission Members “Report of the High-Level Commission on Carbon Prices,” Carbon Pricing Leadership Coalition, International Bank for Reconstruction and Development and

Concluding Remarks

This is a defining moment in history. On the one hand, we can ignore these risks, at great peril to our future. On the other hand, we can seize this opportunity and move away from an energy and economic system that has dominated the world for two centuries. What we have accomplished in the last twenty years should provide us with the confidence that this new economy can provide a new era of innovation, creating more and better jobs and a higher standard of living. This new era will play to America's strengths, to the determination and ingenuity of people and the vitality of its institutions—including those that have long fostered innovation.

International Development Association/ The World Bank, May 29,2017 accessible at <https://www.carbonpricingleadership.org/report-of-the-highlevel-commission-on-carbon-prices/>