Funding the Future

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This is one of a series of posts that will ask what the most pertinent question raised by a prominent influencer of political economy might have been, and what the relevance of that question might be today. There is a list of all posts in the series at the end of each entry. The origin of this series is noted here.

After the first two posts in this series, the topics have been chosen by me, and this is one of those. This series has been produced using what I describe as directed AI searches to establish positions with which I agree, followed by final editing before publication.

Why have I included William Nordhaus? That is mainly because Nordhaus exemplifies what is wrong with mainstream economics when applied to climate change.

First, Nordhaus treats climate damage as a small cost to GDP when the reality is that climate breakdown threatens physical survival, infrastructure, food systems and social order. It is not about a marginal reduction in output.

Second, Nordhaus relies on equilibrium modelling, and equilibrium models are structurally incapable of representing collapse.

Third, Nordhaus's use of discounting dramatically devalues future lives. Keen argues that discounting future damage effectively writes off future generations and makes inaction appear "optimal".

Fourth, Nordhaus treats the economy as largely independent of biophysical limits. This is absurd: the economy is embedded in, and constrained by, energy flows and ecological systems.

The conclusion is blunt: Nordhaus's work gives intellectual cover to delay. It makes catastrophic risk look manageable, and in doing so, dangerously misleads policymakers at precisely the moment realism is required.

Nordhaus deserves mention precisely because he demonstrates that it is possible to win the Nobel Prize in economics for being catastrophically wrong.

William Nordhaus is noted as the economist who is said to have brought climate change into economic modelling, earning him the 2018 Nobel Prize. But his legacy is far more troubling than that accolade suggests. Nordhaus's "DICE" (Dynamic Integrated Climate-Economy) models and the broader Integrated Assessment Model (IAM) framework he popularised have done something astonishingly dangerous: they have reassured policymakers that catastrophic global warming will have only modest economic impacts.

As Steve Keen, one of the most persistent critics of IAMs, has demonstrated, Nordhaus's models rest on assumptions so detached from physical reality that they amount to pseudo-science. They treat 4°C of warming — a level widely considered compatible with civilisational collapse — as causing only a single-digit percentage reduction in global GDP. They assume vast areas of the planet that will be rendered uninhabitable remain economically productive. They rely on guesses rather than physical modelling to determine climate damages. And they embed discount rates that minimise the value of future human life.

Far from warning humanity of existential risk, Nordhaus's work has provided intellectual cover for delay, complacency and incrementalism. His models have underpinned decades of tepid climate policy and legitimised the belief that the market can handle what physics tells us is an emergency.

Hence the William Nordhaus Question: If the climate-economy models shaping global policy systematically underestimate catastrophe, misrepresent physical reality, and legitimise dangerous inaction, why do we still rely on them to guide the fate of civilisation?

A model that sanitises catastrophe

Nordhaus's central claim is that climate change will be costly but manageable. His DICE models, which are still used by governments and international institutions, suggest that even extreme warming will reduce global GDP by only a few percentage points.

This result is not the outcome of rigorous physical modelling. It comes from a set of arbitrary assumptions that assign "damage functions" based on limited data unrelated to climate physics. The models exclude tipping points, ecosystem collapse, mass migration, agricultural failure and conflict. They treat the biosphere as if it were a neat, linear component of an economic equation.

By excluding the catastrophic, Nordhaus's models guarantee the conclusion that a catastrophe will not happen.

The seduction of false precision

Nordhaus's IAMs present themselves as scientific because they use complex mathematics. But complexity does not produce truth when the inputs are wrong. His temperature–damage relationships are speculative; his representations of human behaviour simplistic; his assumptions about technological substitution wildly optimistic.

The danger lies in the authority the models command. Policymakers treat their outputs as objective forecasts rather than artefacts of questionable assumptions. The result is a false sense of knowledge and a false sense of safety. Nordhaus created models that look rigorous but are unmoored from physical limits.

This illusion of precision has done immense harm.

The moral vacuum of discounting

Nordhaus uses discount rates that dramatically reduce the value of future generations' welfare. A life lost in 2100 is treated as less significant than a small cost today. This is not science; it is a moral choice disguised as mathematical necessity.

High discounting effectively asserts that preventing catastrophe for future generations is too "expensive" to justify action now. It devalues the lives of those yet to be born and places a price tag on planetary stability.

In doing so, it embeds an intergenerational injustice that should horrify any serious moral philosopher.

Ignoring physical limits

Nordhaus treats the economy as if it were floating above the physical world; a system of preferences, prices and production functions, only lightly touched by energy, ecology or thermodynamics.

In reality, economies are embedded in natural systems. They depend on stable climates, predictable weather, fertile soils, functioning oceans, and safe temperatures. Nordhaus's IAMs treat these conditions as optional. They assume that economic activity can continue largely unaffected even when physical reality collapses.

Steve Keen and others expose the absurdity: you cannot have GDP on a dead planet.

Legitimising under-reaction

The most politically consequential aspect of Nordhaus's work is not academic error but its influence. His models guided US government climate policy for decades. They shaped cost–benefit analyses across the global north. They helped justify slow timelines for decarbonisation and incremental targets that fail to match the speed of physical change.

Nordhaus concluded that the “optimal” level of global warming is around 3.5°C. This is astonishing: a level at which large parts of the world would become uninhabitable, food systems would buckle, and global conflict would explode. Yet such conclusions flowed logically from models designed to downplay catastrophe from the outset.

What answering the William Nordhaus Question would require

To take Nordhaus’s critics seriously — and to protect humanity from model-induced complacency — we would need to:

* Abandon IAMs that ignore physics, in the process rejecting models that treat climate risk as a smooth and mild function of temperature.

* Build models rooted in physical science, incorporating tipping points, non-linear damage, systemic collapse and ecological interdependence.

* End the use of high discount rates, recognising that future lives cannot be devalued because present elites prefer low costs today.

* Treat climate action as a moral imperative, not a market optimisation problem, recognising that survival is not an economic choice but a foundational condition.

* Reframe climate policy around precaution, not prediction, acting on the worst plausible outcomes, not the rosier ones favoured by IAMs.

These are not refinements. They are a fundamental rejection of the framework Nordhaus built.

Inference

The William Nordhaus Question forces us to confront the terrifying disconnect between economics and physical reality. Nordhaus’s models, even if they are celebrated by the discipline and used by governments, treat existential risk as a manageable inconvenience. They have reassured policymakers when they should have alarmed them. They have provided the appearance of knowledge where there is uncertainty, and the veneer of rationality where there is wishful thinking.

The tragedy is that models designed to guide humanity away from danger instead steered us toward complacency. Nordhaus offered the world a mathematical tranquilliser, and the world eagerly swallowed it.

To answer his question is to reject the intellectual comforts of false certainty and insist that economics face the reality physics already describes. The climate does not negotiate with discount rates. It does not obey production functions. It does not respond to optimisation.

It responds to emissions, and it punishes delay.

The task now is clear. It is to:

* replace models that reassure with models that warn,
* replace complacency with courage, and
* rebuild climate policy on the basis of physical truth rather than economic fantasy.

Previous posts in this series:

* ***The economic questions***
* ***Economic questions: The Henry Ford Question***
* ***Economic questions: The Mark Carney Question***
* ***Economics questions: The Keynes question***
* ***Economics questions: The Karl Marx question***
* ***Economics questions: the Milton Friedman question***
* ***Economic questions: The Hayek question***
* ***Economic questions: The James Buchanan question***
* ***Economic questions: The J K Galbraith question***
* ***Economic questions: the Hyman Minsky question***
* ***Economic questions: the Joseph Schumpeter question***
* ***Economic questions: The E F Schumacher question***
* ***Economics questions: the John Rawls question***
* ***Economic questions: the Thomas Piketty question***
* ***Economic questions: the Gary Becker question***
* ***Economics questions: The Greg Mankiw question***
* ***Economic questions: The Paul Krugman***
* ***Economic question: the Tony Judt question***
* ***Economic questions: The Nancy MacLean question***
* ***Economic questions: The David Graeber question***
* ***The economic questions: the Amartya Sen question***
* ***Economic questions: the Jesus of Nazareth question***

* ***Economic questions: the Adam Smith question***
* ***Economic questions: (one of) the Steve Keen question(s)***
* ***Economic questions: the Stephanie Kelton question***
* ***Economic questions: the Thomas Paine question***
* ***Economic questions: the John Christensen question***
* ***Economic questions: the Eugene Fama question***
* ***Economic questions: the Thomas Hobbes Question***
* ***Economic questions: the James Tobin question***
* ***Economic questions: the William Beveridge question***

Tickets are now on sale for the Funding the Future live event in Cambridge on 28 February. ***Tickets and details are available here.***

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