

How can climate be accounted for in national accounts? An Insee proposal to “augment” national accounts.

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Abstract

In this paper, we propose an adjustment to the accounting framework to account for two implicit greenhouse gas (GHG)-related costs: the damage caused by climate change and the cost of mitigation policies. These costs are both linked to GHG emissions but valued differently.

The damage cost, based on Rennert et al. (Nature, 2022), reflects the depletion of “climate capital” caused by an additional ton of GHG in the atmosphere. This depletion results in economic damages (e.g., agricultural loss) as well as non-economic impacts (e.g., health issues and fatalities). The cost of mitigation policies, in contrast, relates to the tightening of the “carbon budget” (CB), which represents the economic cost of implementing these policies. Quinet (2025) estimates this cost as the shadow price associated with the CB constraint.

By incorporating the depletion of “climate capital” and the “carbon budget,” these costs can be integrated with standard national accounting indicators, such as net domestic product (NDP) and net savings (NS), which already account for the depletion of productive capital. Adjusting NDP for GHG emissions reduces it by 4.1% in 2023 (or 5.5% when including the health and mortality effects of global warming). Adjusting net savings makes it negative (-133 billion euros in 2023), signaling unsustainable economic activity. Applying the CB shadow price to the remaining carbon budget, we estimate the total discounted cost of decarbonizing the economy at 929 billion euros.

However, these estimates involve considerable uncertainties and should be considered as indicative orders of magnitude.

Keywords:

National Accounts, Carbon Prices, Carbon Budget

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