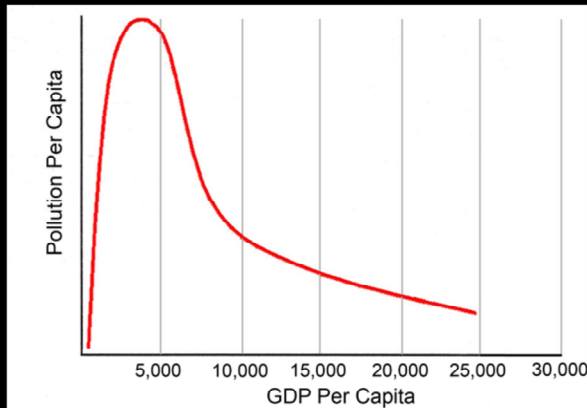




- Will increasing wealth reduce pollution?
- It can.
- Under certain conditions.

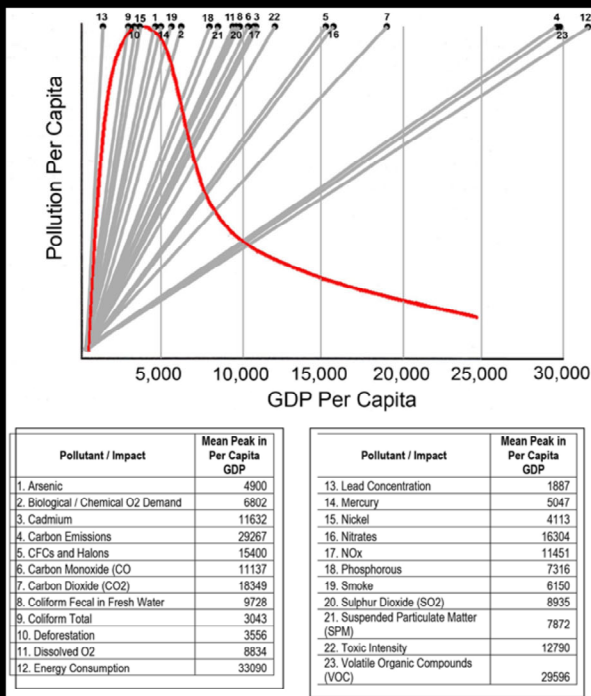
## Environmental Kuznets Curve (EKC)

- The Environmental Kuznets Curve (called the EKC) was first shown to exist in 1991, noting a **correlation** that as the GDP of a country increases the amount of pollution decreases.
- Then, in 1992, the World Bank generalized the EKC and claimed that although trade-led economic growth would **cause** increases in environmental degradation (especially pollution) during the early stages of economic growth, the degradation would taper off as countries reached turning points ranging from \$3,000 to \$5,000 GDP per person.



Gallagher, K.P. Economic globalization and the environment. *Annual Review of Environmental Resources*. 2009. Downloaded from <https://www.annualreviews.org/doi/pdf/10.1146/annurev.environ.33.021407.092325> on 22 February 2023

- This is a generalized version of what that EKC curve looks like.
- GDP per person is on the horizontal axis and pollution is on the vertical axis.
- The graph shows how pollution increases during the early stages of a country's economic growth, but then, as the country achieves greater wealth, pollution tapers off.
- To this day, generalizations of this finding have been used to make the claim that countries should grow now through increased free trade and worry about the environment later.
- But the EKC is not generalizable to all pollutants, and certainly not to all environmental impacts.



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- This graph shows a selection of environmental pollutants and impacts along with the GDP that is believed to be where the transition point is.
- Many of the pollutants/impacts require higher levels of GDP than the World Bank claims before any transition occurs, implying that countries have to endure environmental impacts for many years.
- For example, toxic intensity (#22) isn't until \$12,790 and nitrate pollution isn't until \$16,304.
- Some of the pollutants/impacts appear to continually increase as wealth increases and may have no transition at all.
- For example, carbon emissions and VOCs require very high GDP levels and may continue to increase..
- Clearly, any EKC that might exist varies with the type of pollutant or impact.

*“When environmental quality does turn toward the better, such forces are not automatic . . . Indeed, it was conscious orchestration by the state which integrated environmental policy into industrial and innovation policies that led to success.”*

Gallagher, K.P. Economic globalization and the environment. *Annual Review of Environmental Resources*. 2009, p. 285. Downloaded from <https://www.annualreviews.org/doi/pdf/10.1146/annurev.environ.33.021407.092325> on 22 February 2023

- Importantly, environmental improvements are not automatic; they don't necessarily occur because of increases in GDP.
- There is a role for government to play in environmental policy, indeed integrating and balancing environmental impacts with industrial and other policies makes a lot of sense.

*“When environmental quality does turn toward the better, such forces are not automatic . . . Indeed, it was conscious orchestration by the state which integrated environmental policy into industrial and innovation policies that led to success.”*

Gallagher, K.P. Economic globalization and the environment. *Annual Review of Environmental Resources*. 2009, p. 285. Downloaded from <https://www.annualreviews.org/doi/pdf/10.1146/annurev.environ.33.021407.092325> on 22 February 2023

*“[T]o provide the services which, in the words of Adam Smith, ‘though they may be in the highest degree advantageous to a great society, are, however, of such a nature, that the profit could never repay the expense to any individual or small number of individuals’ – these tasks provide, indeed, a wide and unquestioned field for state activity. In no system that could be rationally defended would the state just do nothing.”*

Hayek, F.A. 1944. *The Road to Serfdom*. As quoted in Bruce Caldwell (editor) 2007. Volume II, *The Collected Works of F.A. Hayek, The Road to Serfdom Text and Documents, The Definitive Edition*. Routledge London: The University of Chicago Press. P. 88.

- And lest one should think that involvement of the government is just a leftist idea, here is a quote from the well-known, conservative Fredrick Hayek.
- A clean and healthy environment is certainly something that is “advantageous to a great society,” and it does seem to fall into the “wide and unquestioned field for state activity.”