

Matthew Lau: Governments may be funding too much research

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Government funding for scientific research is generally justified by claims that scientific knowledge is a public good. A public good, in economic jargon, is “non-excludable” and “non-rivalrous,” meaning you can’t stop people from consuming it even if they don’t pay for it, while one person consuming it doesn’t make it less available to others — which seems true of many kinds of knowledge. It can make sense for governments to pay for goods that meet these criteria, such as national security or lighthouses, which might otherwise be under-provided in a free market — though 1991 economics Nobelist Ronald Coase wrote a famous study of privately-provided lighthouses in pre-industrial Britain.

But should governments really fund scientific research? In addition to non-excludability and non-rivalry, a third requirement for government spending on alleged public goods should be that the spending actually does some good. This point, too often overlooked, was made most succinctly by mathematician and writer David Berlinski in an [interview](#) in 2014. When the interviewer suggested “I thought we were all supposed to believe in basic research,” pointing to the symbiotic relationship between government funding and research universities, Berlinski responded: “Not me. What good does it do?”

One of Berlinski’s primary complaints about the scientific establishment being in bed with government concerned the state of global warming research and the exaggeration of certainty regarding theories of climate catastrophe. Scientists wishing to help themselves to taxpayers’ money, he contended, need only affirm to a government agency that they have red-hot proof that global warming is becoming increasingly dangerous. Scientists get money; politicians get to tell everyone that according to the science, their interventions will save the world from burning. This is a cynical view perhaps, but a reasonable one, and it conforms to the common sense idea that politicians, bureaucrats, and scientists are as self-interested as everyone else, and not angels devoted only to the public interest.

Like Berlinski, Cato Institute scholar Patrick J. Michaels has [argued](#) that in the area of environmental science, “the more public money is disbursed, the poorer the quality of the science.” First, the massive government expenditures cause a systematic bias by ensuring climate catastrophe research is well-funded but contrary research is not. Second, they create a situation in which the careers and livelihoods of global warming scientists depend on government funding of global warming research, which in turn depends on public concern about global warming, with the result that scientists have every incentive to produce research consistent with catastrophe theories and little incentive to publish any findings to the opposite.

Indeed, two separate papers last year [concluded](#) that climate models have significantly overestimated global warming and that the mismatch between the models and reality have

worsened over time. One of the papers, by climate researcher Dann M. Mitchell of the University of Bristol and colleagues, found that the model relied upon by Canada's federal government "simulates the greatest warming in the troposphere, roughly seven times larger than the observed trends." The other paper, by the University of Guelph's Ross McKittrick and the University of Alabama in Huntsville's John Christy, examined 38 models and found that every one predicted more warming than the observed trend, with most of the differences too large to be explained by noise or randomness.

So, given the significant problems with the global warming research that has informed policy-making, Berlinski's question imposes itself: what good does government-funded science do?

Research on global warming isn't the only problem. Proponents of government funding for all kinds of scientific research will often try to justify it with the public goods pretext, but with few exceptions, the empirical evidence of the benefits of the spending is lacking. While its supporters claim government-funded science fuels technological advancement and economic growth, the greatest scientific achievements are generally not the results of government efforts.

Indeed, the periods of most rapid economic growth – in the United Kingdom in the 19th century and in the United States in the first half of the 20th – took place under a largely laissez-faire approach to funding scientific research. According to biochemist Terence Kealey, the empirical evidence "confirms that the government funding of R&D has no economic benefit." Included in that evidence is a 2003 OECD report, which found "marked positive effect of business-sector R&D" but "negative results for public R&D" (which the OECD researchers qualified by saying there could be positive effects of public R&D that their analysis missed).

As with economic policy in general, a laissez-faire approach to funding scientific research means a limited role for government — but not no role. For example, some amount of government-funded research for public health purposes, including vaccines, might be beneficial. But in general, the empirical record shows that, especially regarding global warming, when it comes to scientific research — as with most things — the government should stay out.