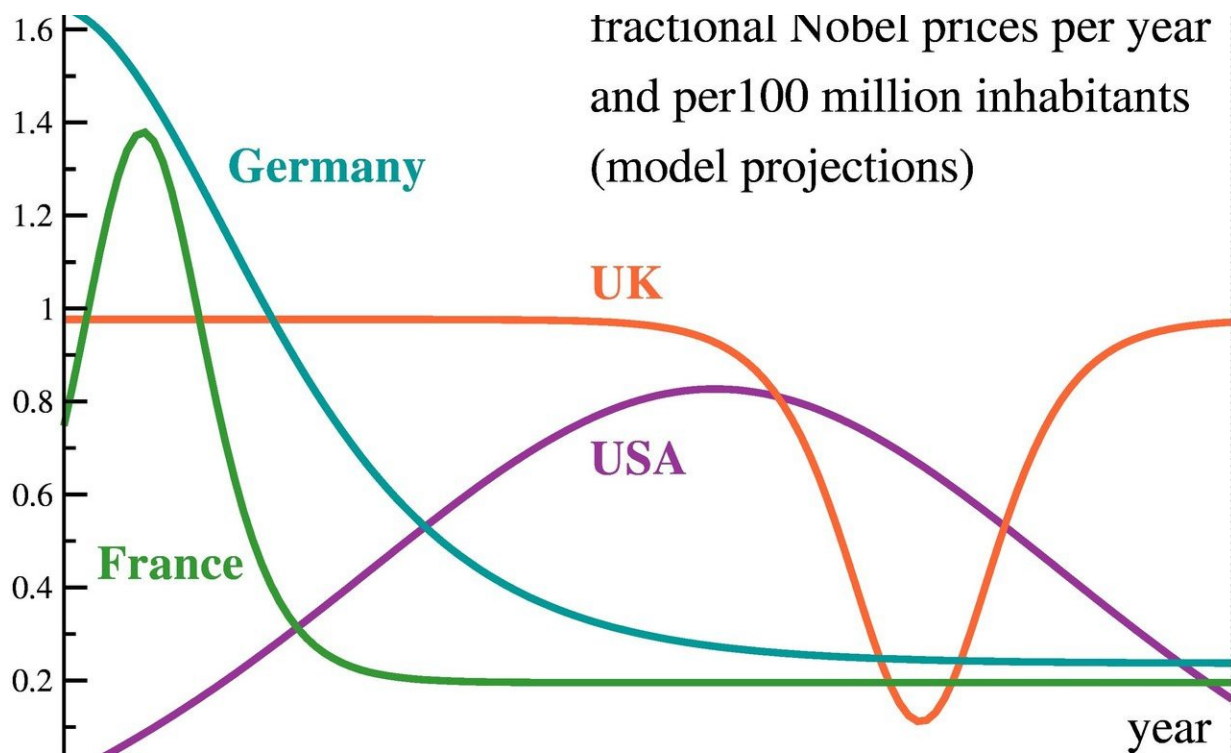


For how long will the USA remain the Nobel Prize leader?

May 10 2018



Nobel Prize productivity chart by country: US, UK, Germany, France. Credit: Claudius Gros, Goethe University

Since first being awarded in 1901, most Nobel Prizes for science have gone to the U.S., the United Kingdom, Germany and France. An empirical study by Professor Claudius Gros from the Institute for Theoretical Physics at the Goethe University in Frankfurt has now

shown that the Nobel Prize productivity in these countries is primarily determined by two factors: a long-term success rate, and periods during which each country has been able to win an especially large number of Nobel Prizes.

For the study, Nobel Prizes for physics, chemistry and medicine were assigned proportionately, since up to three scientists can share the [prize](#). The success rates were calculated on the basis of population figures. For France and Germany, the periods of increased scientific creativity occurred around 1900, whereas for the USA it occurred in the second half of the 20th century.

"The U.S. era is approaching its end," states Claudius Gros. "Since its zenith in the 1970s, U.S. Nobel Prize productivity has already declined by a factor of 2.4." According to his calculations, a further decline is foreseeable. "Our model predicts that starting in 2025, the productivity of the U.S. will be below that of Germany, and from 2028, below that of France as well."

With a nearly constant, very high success rate per capita, Great Britain occupies a special position with regard to Nobel Prizes. It remains uncertain, however, whether Great Britain will be able to maintain this success, especially in view of the increasing industrialization of research.

"National research advancement can undoubtedly also be successful independent of Nobel Prize productivity," Claudius Gros stresses. "Especially because new areas of research such as the computer sciences—a typical U.S. domain—are not included." It therefore remains open whether the decline in Nobel Prize [productivity](#) is cause for concern, or merely an expression of a new orientation toward more promising research fields.

More information: Claudius Gros: An empirical study of the per

capita yield of science Nobel Prizes: Is the US era coming to an end?, in: *Royal Society Open Science* (2018)

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Claudius Gros: Pushing the complexity barrier: diminishing returns in the sciences, in: *Complex Systems* 21, 183 (2012).

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