

# To measure or not to measure..

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The United States currently spends about 2.7 percent of its gross domestic product (GDP) on research and development, about half of which comes from federal sources. This amount is comparable to annual expenditures on transportation and water infrastructure (3 percent of GDP) and on education (5.5 percent). The magnitude of the investments required for maintaining the scientific enterprise have resulted in calls for a quantitative assessment of the impact of the contributions of individuals and institutions, so that policy makers are persuaded that resources are being used effectively.

Despite its importance, whether and how to quantify scientific impact remains a source of controversy within the research community. For example, the San Francisco Declaration on Research Assessment has promoted “the need to eliminate the use of journal-based metrics, such as journal Impact Factors, in funding, appointment, and promotion considerations.” I find it surprising that a scientist would propose a move away from measurement and quantification when these activities are at the core of science itself. I believe that when considering an imperfect but necessary tool, the right course of action is to seek to improve it, rather than to discard it. The scientific community—and especially the funding agencies—should support the development of better bibliometric evaluation tools rather than oppose their use altogether.