Promises and Limitations of Performance Measures

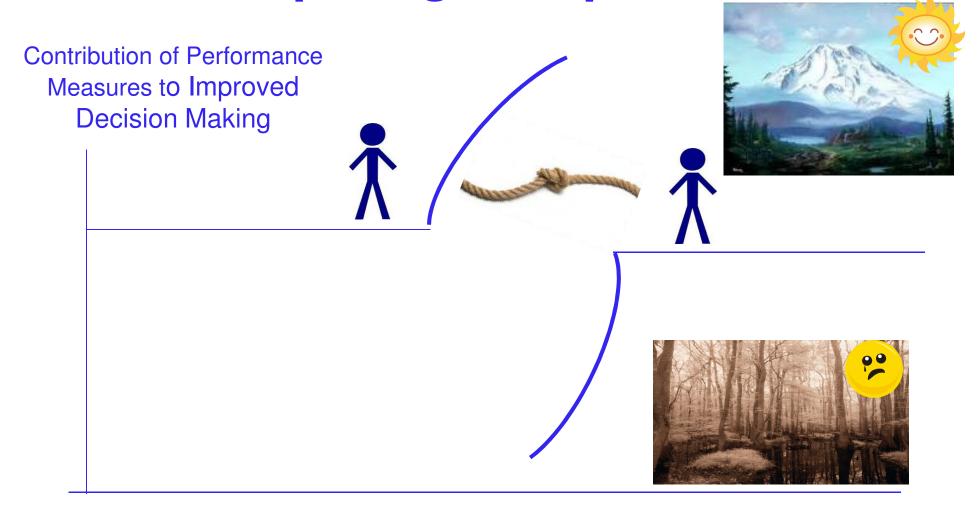
Irwin Feller, Senior Visiting Scientist, American Association for the Advancement of Science and Professor Emeritus, Economics, Pennsylvania State University

Workshop on "Measuring Economic and Other Returns on Federal Investments in Research"

National Academies-Board on Science, Technology, and Economic Policy and Committee on Science, Engineering and Public Policy

Washington, DC April 18, 2011

Competing Perspectives



Tug-of-war Assessments of the Promises and Limitations of Performance Measures

"It's a condition we confront-not a theory". Grover Cleveland

"Not everything that counts can be counted, and not everything that can be counted counts". Albert Einstein

Uses of Performance Measures

- Monitoring
- Benchmarking
- Evaluation
- Foresight
- Advocacy

Old or New Wine?

 Performance measures are basic, indispensible elements of informed decision making

 Performance measures are the dependent and independent variables of longstanding and diverse research traditions

What is New?

What is New

- Performance measures are increasingly mandated components of appropriation decisions and oversight reviews
- Dominant "ethos": Heightened belief that better measures will lead to better (evidence-based) decisions
- Impressive stream of new data sets and analytical techniques
- Increased political/policy trends towards performance based budgeting

Promises and Limitations are a Function of Decision Making Contexts

- Who is asking question?
- What question is being asked?
- What is the purpose of the question?
- What role does research play in fulfilling the agency's mission?

Context Again

- Retrospective Assessments of Realized, Observed, Measured Impacts
- Prospective Assessments of Research Advances, Coupled with Forecasts of How These Advances will Contribute to Societal Objectives

State of the Art: Research Performance

- Multiple performance measures-37+; increasing in number
- Multiple methodologies; increasing in number
- Numerous scorecards; increasing in number

Promises & Limitations: Research Performance

Promises

- Objectives provide useful baseline for assessing each of 4 modalities of accountability (finance; equity; use of power; performance).
- Well defined objectives and documentation of results facilitate communication with funders, performers, users, and others.
- Performance measurement focuses attention on the end objectives of public policy, on what's happened or happening outside rather than inside the black box.
- Performance measurement is a potential prophylactic against the episodic cold fusion-type viruses that have beset the formulation of U.S. science policy.

Promises & Limitations: Research Performance cont.

Limitations

- Returns/Impacts to research are uncertain, long-term, and circuitous
- Impacts are typically dependent on complementary actions by agents outside of Federal agency control
- Benefits from "failure" are underestimated
- Specious precision in selection of measures
- Distortion of Incentives
- Limited (public) evidence of contributions to improved decision making

Enhanced Promise

New theories, models, techniques, data sets coupled with strengthening of a community of practice will considerably increase the supply and utilization of research-based, policy relevant performance measures

BIG "3" FEDERAL SCIENCE QUESTIONS

QUESTION

 How much should be allocated to Federal research?

- How much to spend across missions/agencies/fields of science?
- Which performers; what allocation criteria?

ROLE OF PERFORMANCE MEASURES

- Measures do not provide a basis for determining if, say, 3% is too high, too low, or just right.
- Measures/methodologies provide multiple answers, leading to multiple possible decisions
- Potentially of considerable value, but underutilized

What's the Meaning of All of This?

Not a scorecard, balance sheet, or the economist's, "on the one hand, on the other hand" presentation.

- Context
- Limitations
- Do No Harm