

***Innovation Policy in Europe: Measurement and Strategy*. Cheltenham, UK: Edward Elgar Publishing. xxiv + 295 pages. ISBN 9781845427597, \$130.00 cloth. Edited by Clare Nauwalers and René Wintjes. 2008.**

In 1963, the philosopher Stephen Toulmin warned that, "Unless decisions about science policy are to be left to be made by *éminences grises*, we shall need a corresponding body of independent informed opinions about the natural history of science . . . research on the intellectual foundation of scientific policy."¹ Toulmin recognized that research on science policy would necessarily have to be accompanied by a close engagement of scholars with decision makers.

The need for rigorous science policy research and connections with science policy decision makers is a common theme in *Innovation Policy in Europe: Measurement and Strategy* edited by Clare Nauwalers and René Wintjes. The volume assembles work conducted by researchers at the Maastricht Economic Research Institute on Innovation and Technology (MERIT) Institute, which is part of the University of Maastricht and the United Nations University.

Two primary themes underlie the impressive scope of research reported in *Innovation Policy in Europe*. The first is to explore the use of innovation indicators to inform policy and the second is to evaluate innovation policy implementation with an aim to offer recommendations for improved effectiveness. The first part of the book (Chapters 1–4) focuses on issues of measurement and significance and the second part (Chapters 5–9) focuses on innovation policy strategy and implementation. A short concluding section offers synthesis and perspective.

The information on indicators of innovation is so complex, so nuanced, that it is easy to understand why such studies have had "little direct impact on the policy community" (p. 15). For instance, Chapter 3 presents a methodology focused on 220 regional economies found within the European Union segregated into 10 clusters of regions to identify 13 indicators representing four factors that are seen to drive economic performance. The authors of this chapter conclude, somewhat obviously, that all of this complexity "quite naturally suggests the formulation of a diversity of innovation policy options."

Chapter 2 presents a similarly rich picture of "Innovation Scorecards" collected by the EU, some of its members, and elsewhere. They document data presented in 11 such scorecards published from 2002 to 2006, finding a rich diversity in methods and indicators. But even with the attention paid to such metrics, the authors conclude that innovation scorecards "are of limited value for the design of specific policies."

It seems that the more that has been learned about indicators, the more that scholars realize that much remains to be learned; with the editors concluding that "today we still do not know much about the relationship between innovation policies and innovation performance" (p. 287). The conclusion related to Innovation Score cards might be applied to indicators more generally, "[they] can help to identify the existence of a problem, but they are of rapidly declining value for policy as one moves from the meso level (sector or region) or to the micro level, where firms are active and where most policy actions occur" (p. 47).

Consequently, despite recognition by a number of academics and decision makers of the pitfalls of viewing funding for R&D as a useful metric of innovation

(Chapter 7), it should come as no surprise that “the countless announcements of the death of the science-push or linear model of innovation, based on R&D . . . is premature. In fact, the science-push model based on R&D is probably the dominant model in use today by both academics and the policy community” (p. 4).

There is perhaps more promise to inform policy making at the specific rather than general level found in the second half of the book, focused on policy evaluation, if only because, as Nauwelaers and Wintjes (Chapter 8) observe, “policies are too seldom evaluated” (p. 240). The lessons identified in the second part of the book are highly congruent with much that can be found in studies of policy evaluation across many substantive areas. Among these lessons, context matters a great deal—“even when the goals of policies are the same for a number of countries or regions, or sectors, the difference in specific contexts may call for different policy solutions” (p. 287).

Another lesson is that policy makers tend to muddle through—“Experience with innovation policy-making in European Member States shows that policies are mainly the result of a heuristic, learning-by-doing process, influenced by history in policy implementation: policies are implemented as a follow-up of existing policies (only seldom informed by evaluations of their effectiveness and efficiency)” (p. 227). Luc Soete, in Chapter 9, offers a broader view, suggesting that what matters most is not so much innovation policy in Europe, but rather, Europe’s role in processes of global innovation. This conclusion seems equally relevant for innovation policies in support of economic growth as well as in support of other policy goals such as related to the environment, energy, agriculture, trade, health, finance, and so on.

In short, *Innovation Policy in Europe* offers much to its readers about the texture of innovation policies of and across the EU. It suggests that despite that considerable knowledge that has been gained of the characteristics of innovation in particular contexts, the community of scholars seeking to contribute to science policy decision making with rigorous analyses have a considerable ways to go before meeting the aspirations of relevance expressed by Stephen Toulmin almost fifty years ago.

Roger Pielke, Jr.
University of Colorado

Note

1 Toulmin, Stephen. 1963. Towards a natural history of science. *New Scientist* 20(364): 315–316.

***Climatic Cataclysm: The Foreign Policy and National Security Implications of Climate Change.* Washington, DC: Brookings Institution Press. 237 pages. ISBN 978-0-8157-1332-6, \$28.95 cloth. Edited by Kurt M. Campbell. 2008.**

Awkward title notwithstanding, *Climatic Cataclysm* is the first attempt at a systematic generation of future climate scenarios and their possible security and foreign policy impacts, and as such is sorely overdue in the field of environmental security. Much of the scholarly literature in this field is devoted to statistical models and general theories; what is lacking is serious national security consideration of the best climate science we have at present, and its possible effects on future policy.