Editor’s Introduction

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This volume is the fourteenth annual volume of the National Bureau of Economic Research (NBER) Innovation Policy and the Economy (IPE) group. The appreciation of the importance of innovation to the economy has increased over the past decade. There is an active debate regarding the implications of technological change for economic policy and the appropriate policies and programs regarding research, innovation, and the commercialization of new technology. This debate has only intensified as policymakers focus on new sources of innovation and growth in light of the continuing economic downturn and the associated focus on enhancing employment and growth.

The IPE group seeks to provide an accessible forum to bring the work of leading academic researchers to an audience of policymakers and those interested in the interaction between public policy and innovation. Our goals are:

• to provide an ongoing forum for the presentation of research on the impact of public policy on the innovative process;
• to stimulate such research by exposing potentially interested researchers to the issues that policymakers consider important; and
• to increase the awareness of policymakers (and the public policy community more generally) concerning contemporary research in economics and the other social sciences that usefully informs the evaluation of current or prospective proposals relating to innovation policy.

This volume contains revised versions of the papers presented in the group’s meeting in Washington, DC, in April 2013. Erin Scott, the Innovation and the Economy Postdoctoral Fellow, provided extraordinary research assistance in this year’s conference and this volume.
Four of five of the papers in this year’s volume highlight the increasing role of the Internet and digitization in our understanding of the changing nature of innovation and entrepreneurship, and the impact of innovation policy. In the first, Liran Einav and Jon Levin offer an overview of the impact of “big data”—large-scale administrative and private sector data sets—on the ability to conduct novel types of measurement and research in economics and related fields. Over the past few years, there has been a qualitative shift in the nature and scale of the data sets that economists, policy analysts, and private sector decision makers are able to use. As emphasized by Einav and Levin, these data sets are not simply “bigger” versions of standard data sets; instead, these data are, in many cases, available in real time, are orders of magnitude larger than prior databases and include not only many observations but often an overwhelming number of potential explanatory variables, and involve novel types of variables and measures. In the private sector, these new data sources have led to what seems to be a revolution in the efforts by companies to track their activities and processes (in essentially real time), and to employ predictive analytics that allow for planning and strategic decision making.

Einav and Levin focus on the potential impact of this data cornucopia on economics and policy research: not only will such data allow researchers to address traditional questions in a more precise way, but they open up opportunities for entirely novel research designs. For example, in their own research on the impact of sales taxes on Internet commerce, Einav and Levin use browsing and purchasing history of eBay customers to document how sales taxes (which are only paid when the buyer and seller are in the same state) affects purchasing behavior; the granular nature of their data allows them to document that sales taxes “matter” for decision making but that there is nonetheless a wedge between the sensitivity of Internet users’ purchase decisions to prices and to taxes. Importantly, Einav and Levin highlight a significant gap between the traditional research approach emphasized by economists and policy analysts (which focus primarily on identifying the causal impact of a single policy or mechanism, all else constant) with the unstructured multivariate approach employed by business users with big data. Rather than being interested in an individual factor in shaping a specific outcome, these approaches combine multiple types of data and sources in order to be able to simply predict what type of behavior is likely to occur in a given situation. Einav and Levin caution that, though the big data revolution offers enormous promise for eco-
omics and policy researchers, researchers may need to be even more diligent to not simply get “lost” in these big data sets, but must instead focus even more sharply on “asking the right questions.”

The second paper in the volume focuses on the impact of the Internet on both the nature and extent of piracy in creative media industries. As highlighted during the 1990s by the emergence of Napster, the Internet enabled widespread digital piracy of digital creative content (such as music or movies); the last decade has witnessed the emergence of new forms and channels for piracy (such as Megaupload), new efforts at copyright enforcement (such as the HADOPI law in France), and the emergence of new channels for digital distribution (such as the iTunes store or Hulu). Drawing on a rapidly emerging literature on the drivers and consequences of piracy and copyright enforcement mechanisms, Brett Danaher, Michael D. Smith, and Rahul Telang focus on four interrelated questions:

- Does piracy harm media sales?
- Can digital channels reduce piracy?
- Can antipiracy efforts increase sales?
- Does piracy affect supply?

Danaher, Smith, and Telang overview a range of evidence that the most probable answer to the first three questions seems to be “yes.” Their review highlights the increasingly sophisticated and creative research designs that have been used to evaluate the interplay between piracy, the availability of legitimate digital channels, and the impact of antipiracy enforcement efforts. For example, in one study, they exploit a contractual breakdown between NBC and iTunes that led to the temporary removal of NBC content from the iTunes platform: there is a pronounced shift toward illegal downloading from the Pirate Bay of NBC content (relative to other American television content) on the first day that the removal occurred, and this shift is sustained over the several weeks that the contract dispute persisted. Danaher, Smith, and Telang also emphasize that, while there is increasing empirical clarity about the drivers of piracy and the impact of antipiracy efforts, there is less systematic research on the impact of piracy on the level and quality of supply of creative media.

The third paper in the volume offers a more exploratory analysis of the rapidly emerging area of crowdfunding. Ajay Agrawal, Christian Catalini, and Avi Goldfarb provide an overview of this phenomenon,
highlighting key differences between nonequity crowdfunding and equity crowdfunding. Their analysis is motivated by the rapid rise in nonequity crowdfunding platforms such as Kickstarter, high-profile funding efforts such as the campaign for the Pebble watch, and the passage of the JOBS Act that dramatically reduces the barriers for equity crowdfunding by retail investors. Agrawal, Catalini, and Goldfarb have undertaken some of the first systematic assessments of crowdfunding, documenting a number of important findings: a few projects account for the bulk of the funding, especially those that get early fundraising momentum; funding is not geographically limited; and family and friends play a significant role.

The paper outlines the core economic benefits and costs of both nonequity and equity crowdfunding. From the perspective of creators/innovators, crowdfunding potentially reduces the cost of capital, facilitates better information from early users and investors, and provides access to a more diverse range of funders. From the perspective of funders, crowdfunding offers early access to new products, access to specialized investment opportunities, and also allows for participation in a like-minded community around particular projects. Despite these potential benefits, crowdfunding also involves significant disadvantages, including the potential for expropriation of disclosed ideas (for innovators) and for fraud (for investors). Agrawal, Catalini, and Goldfarb discuss how the market of crowdfunding platforms mitigate or exacerbate these challenges, such as the importance of transparent platform-specific rules and regulations. Acknowledging that there remain a host of open questions in this area, the authors nonetheless offer a systematic empirical overview of this emerging area and its potential impact.

The fourth paper in the volume addresses the underpinnings of much of the digital economy by focusing on the institutional logic of standard-setting organizations. Motivated by the increasing importance of standard-setting organizations in shaping both the Internet and other technologies, Timothy Simcoe synthesizes a wide body of theoretical and empirical economics research about the conditions that allow standard-setting bodies to function and achieve their objectives. He builds on Elinor Ostrom’s classic framework for evaluating self-governing organizations, evaluating each of Ostrom’s eight design rules. He documents that, in most cases, best-practice SSOs mitigate or address the concerns raised by Ostrom. Simcoe’s analysis also highlights that SSO designers may be able to draw lessons from Ostrom’s
more general insights: for example, while SSOs have tended to be successful in terms of encouraging the development of standards, there has been a more uneven record in terms of monitoring and enforcement.

The final paper for this year’s volume focuses on the interplay between geographic clusters, entrepreneurship, and innovation. Though appreciation for the importance of clusters and the potential for industrial policy goes back to the early days of the United States, policymakers have become increasingly focused on nurturing local clusters of innovation and entrepreneurship. Aaron Chatterji, Edward Glaeser, and William Kerr offer an overview of the theoretical and empirical literature in economics on cluster-oriented policies, and reflect on the likely impact of recent initiatives in this area.

The authors highlight a number of challenges that must be met if the most activist cluster policies that are being explored by local and national policymakers are to be justified. These include credibly linking innovation and entrepreneurship to local economic performance, and identifying the impact of specific policies and initiatives on these activities. Their analysis highlights a number of robust empirical findings: for example, that research universities powerfully impact local economic development and that policies supporting large-scale employers can crowd out small-scale start-ups. But their analysis also offers a cautionary note: much more information is needed before entrepreneurship policy can attain the depth of understanding reached by international trade or competition policy.

Together, these essays continue to highlight the importance of economic theory and empirical analysis in innovation policy analysis. While the issues involved are undoubtedly difficult, the chapters in this year’s volume continue to suggest that contemporary research in economics informs the evaluation of current and prospective innovation policy alternatives.

Endnote

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