Peterson Institute for International Economics

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Keith E. Maskus, research fellow at the Peterson Institute for International Economics, is professor of economics and associate dean for social sciences at the University of Colorado, Boulder. He is also a fellow at the Kiel Institute for World Economics and an adjunct professor at the University of Adelaide. He was a lead economist in the Development Research Group at the World Bank, visiting professor at the University of Bocconi, and a visiting scholar at the CES-Ifo Institute at the University of Munich and the China Center for Economic Research at Peking University. He serves as a consultant to the World Bank and the World Intellectual Property Organization and is currently chairing a panel of the National Academy of Sciences on intellectual property management in standard-setting organizations. He is the author of *Intellectual Property Rights in the Global Economy* (2000).

PETER G. PETERSON INSTITUTE FOR INTERNATIONAL ECONOMICS
1750 Massachusetts Avenue, NW
Washington, DC 20036-1903
(202) 328-9000 FAX: (202) 659-3225
www.piie.com

C. Fred Bergsten, *Director*
Edward A. Tureen, *Director of Publications, Marketing, and Web Development*

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Preface

International economists devote great efforts to analyze how trade and investment liberalization affect global commerce, development, and growth. Far less attention is paid to the national and international regulatory architecture that governs the actual conditions under which such activities occur. A central foundation of this architecture is the global system of intellectual property rights (IPRs), made up of both national laws and international agreements.

Patents and trade secrets play critical roles in supporting international trade and investment in high-technology goods. Copyrights govern legal exchanges of digital products in the information and entertainment industries. Trademarks and geographical indications offer firms the ability to differentiate their names and quality characteristics in international trade, appealing to consumers of varying tastes and incomes. These and other IPRs permit firms to segment markets and offer different prices across countries and consumer groups in order to raise profits and the returns to innovation and creativity. Indeed, IPRs are ubiquitous in trade, investment, licensing, production, and marketing on a global scale and therefore demand analytical attention.

The Peterson Institute first took on this challenge 12 years ago when it published a volume by Keith Maskus titled *Intellectual Property Rights in the Global Economy*. That book, written in the wake of the founding of the World Trade Organization (WTO) and the TRIPS Agreement, has often been cited as a landmark in the area of IPRs, trade, and development. Much has changed since its release in 2000, however. There are additional international treaties, significant IPR reforms throughout the emerging-market and developing economies, and dramatic and ongoing technological changes in key industries that are stressing the system. Further, many of the areas that are foremost on the international policy agenda, such as access to medicines, agricultural

sustainability, environmental protection, preservation of biodiversity, and the dissemination of basic scientific knowledge, are closely related to IPRs.

The Institute believes that these issues are extremely important, yet not fully understood, and that now is a good time to bring out a new and thorough analysis. In this volume, Maskus offers a comprehensive economic treatment of the full range of global issues touched by IPRs. He argues that recent empirical evidence strongly suggests that recent and ongoing intellectual property reforms—arguably more dynamic than trade liberalization—are working behind the scenes to improve channels of international technology transfer including trade, investment, and licensing. Thus, IPRs are asserting their "trade-relatedness" in a positive way, facilitating global information markets. The bulk of this improvement, however, occurs among the developed and emerging-market and middle-income countries, with little effect in the poorest nations.

Many readers may think that global IPR policy changes stopped with the TRIPS Agreement but, as Maskus describes, the situation has evolved dynamically since then. A strong tension has emerged between major industrialized countries, which push for ever-stronger IPRs in preferential trade agreements and other arenas, and key developing economies, which advocate more restrictions on the international scope of patents and copyrights. Whether and how this tension might resolve itself is unclear, though the economic analysis in this book suggests some guidelines.

As that history indicates, debates over IPRs go far beyond the basic question of how they may affect international trade. Thus, Maskus takes on a series of difficult questions, ranging from how well the current system works to the deep connections between patents and global public health and between IPRs and access to knowledge. For example, he extensively analyzes the competitive effects of market segmentation, rights exhaustion, and parallel imports on pharmaceutical prices within the European Union and uses that history to argue for a cautious and phased approach to opening the US market to reimportation. He also takes a critical look at the attempts of digital content providers to use expanded copyright law, and the courts, to defend their economic models against rapid and inevitable technological change. These efforts are ultimately unsustainable without reforms in how digital goods are licensed. Maskus sets out a broad roadmap for that purpose, arguing in particular for streamlined global licensing rights and international competition among rights-collection societies. He also calls for more transparency and information in patent databases, cautious progress in the global treatment of geographical indications, and new means of encouraging meaningful investments in IPR enforcement.

The thorniest problems raised by IPRs are in their complex interrelationships with the provision of critical global public goods. Whether discussing access to medicines, diffusion of green technologies, protection of new agricultural varieties, preservation of genetic resources and traditional knowledge, or the privatization of basic knowledge, Maskus analyzes the economic tradeoffs

in these contentious and controversial interfaces. In each case, an extensive set of national and international policy recommendations is made based on these economic factors. Readers may disagree with many of these ideas but they are presented here with as much evidence and logic as possible.

Ultimately, Maskus believes that the global IPR system stands at a fundamentally important crossroads and policymakers need to consider how to modify it in order to meet the needs of 21st century innovators, creators, and consumers. These needs are evolving rapidly in ways that often are no longer consistent with traditional IPR protection. The system needs to become more open, transparent, and responsive, while still protecting the returns to investments in innovation and creativity. It is a delicate balance to strive for.

Because it is a comprehensive treatment of a complex set of regulatory issues and their far-reaching effects, this volume is unusually lengthy for a publication of the Peterson Institute. However, we are pleased to present it to policymakers, international organizations, private enterprises, NGOs, and academic scholars as an indication of our commitment to wide-ranging analysis of fundamentally important, yet often overlooked, areas of global regulation. We hope the book, like its predecessor from 2000, raises understanding and awareness while provoking deeper thought and debate.

The Peter G. Peterson Institute for International Economics is a private, nonprofit institution for the study and discussion of international economic policy. Its purpose is to analyze important issues in that area and to develop and communicate practical new approaches for dealing with them. The Institute is completely nonpartisan.

The Institute is funded by a highly diversified group of philanthropic foundations, private corporations, and interested individuals. About 35 percent of the Institute's resources in our latest fiscal year was provided by contributors outside the United States. Generous initial support for this study was provided by the Pfizer Foundation.

The Institute's Board of Directors bears overall responsibilities for the Institute and gives general guidance and approval to its research program, including the identification of topics that are likely to become important over the medium run (one to three years) and that should be addressed by the Institute. The director, working closely with the staff and outside Advisory Committee, is responsible for the development of particular projects and makes the final decision to publish an individual study.

The Institute hopes that its studies and other activities will contribute to building a stronger foundation for international economic policy around the world. We invite readers of these publications to let us know how they think we can best accomplish this objective.

C. Fred Bergsten
Director
July 2012

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1750 Massachusetts Avenue, NW, Washington, DC 20036-1903
(202) 328-9000 Fax: (202) 659-3225

Foreword

In 2000 the (then) Institute for International Economics kindly published this volume's predecessor, titled *Intellectual Property Rights in the Global Economy*. In that book I tried to place before interested readers the basic proposition that intellectual property rights (IPRs) were a critical element of innovation and trade policy that deserved far greater attention from international and development economists. The book also had a substantial policy focus, coming in the wake of the recent conclusion of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) at the World Trade Organization. It offered largely speculative analysis of how the new regime of required IPR standards might affect economic development prospects and how reforming nations might best manage their transformations. The book ended on a largely optimistic note, suggesting that a globalized regime could, if appropriately complemented by other policies, materially improve the functioning of international trade in technology and information.

Over ten years have passed and now seems a propitious time to bring out a completely new volume that both analyzes the period since TRIPS and offers further policy insights. Things have changed considerably in the last decade or so, in a number of important dimensions. First, ten years ago the economics literature remained thin and there were fewer aspects of IPRs and trade about which we had solid evidence than there were gaping holes in our understanding. Fortunately, since that time economic analysis has deepened and broadened considerably, offering new evidence and fresh insights into the major roles and significant impacts of IPRs in the global economy. Trade economists certainly now understand that we need to go beyond simulating the effects of basic tariff cuts and focus more attention on fundamental regulatory changes, which may well be more powerful than trade liberalization. Analysts of intellectual property rights have been at the forefront of this trend.

Several examples could be mentioned but two will make the point. One is that several trade economists have developed novel models explaining the effects of parallel imports (merchandise traded legally but without the authorization of the owner of the relevant IPRs) on prices, welfare, and innovation. These insights have direct implications for understanding the likely outcomes of liberalizing such restrictions on reimportation. Another is that economists have carefully studied the reactions of individual multinational firms to changes in patent rights around the world. Results of such investigations are considerably more informative than those of cross-country regressions, which were the standard of evidence available ten years ago.

A second massive change is that IPRs have become the major coin of the realm in trading goods and technologies across borders, whether through goods, investment, licensing, or, especially, over the internet. At least among the developed economies—though increasingly also in such major emerging-market economies as Brazil, India, South Korea, and China—inventive firms and creative interests rely increasingly on their ability to control production and distribution in order to earn profits. In chapter 1 I refer to this "new ownership economy" and sketch out some major implications. Among these are the elucidation of new and expanded forms of intellectual property, a massive expansion of global patenting, and the emergence of complex interrelationships among intricate technologies, all of which require policy attention. Further, digital content providers desire to sell their products globally but run inevitably into problems of unauthorized downloading and use, which in itself may sometimes be a form of creativity worth nurturing. Perhaps most devilish, the amount of copyright piracy and trademark counterfeiting in global trade has grown apace, raising a number of strategic policy issues.

A third, and fundamental, change has been the growing realization that IPRs have numerous and complex relationships with other forms of public policy, such as providing essential medicines to poor patients, deploying new and locally effective green technologies to improve soil conditions or reduce greenhouse gas emissions, and sustaining widespread access to scientific knowledge. Opinions about these interfaces are contentious and strongly held, with elements of civil society often arguing that IPRs should be severely restricted in scope in order to expand access and reduce prices and practitioners countering that IPRs are essential components of that very access. There are no easy answers to such questions, though economic analysis can offer important insights.

In this context, I really have four objectives in writing the present volume. The first is to take stock of what evidence may be gathered from new economic analysis of the roles IPRs play in innovation, investment, trade, licensing, and strategic behavior. This is the task of chapter 2, which documents the remarkable expansion of global IPRs in the period since TRIPS. An extensive review of the economics literature leads to the conclusion that these changes are having notable impacts on international technology transfer, at least toward larger emerging-market economies. There is also evidence of structural change

in emerging-market countries, associated with patent reforms, supporting growth in exports of sophisticated manufacturing goods. A number of qualifications to these positive results are drawn in that chapter, however, in the hope that further research will be inspired and undertaken. Economists interested in the trade, technological, and development aspects of IPRs should find this chapter worth reading.

A second goal is to assess where the global IPR system has moved since the implementation of TRIPS in 1995. There are numerous elements of these additional policy reforms, including the so-called TRIPS-Plus agenda in free trade agreements, new treaties struck at the World Intellectual Property Organization (WIPO), and a new emphasis on stronger enforcement measures among major trading partners. Equally, those concerned about the possibility that a reformed global IPR regime will damage prospects for economic development and limit the scope of public policy have mounted an effective push-back, expressed most forcefully in the new Development Agenda at the WIPO. These complex issues are the subject of chapter 3. Readers interested in the law and economics of international negotiations and how these policies affect international relations should find that review worthwhile.

A third objective is to offer a thorough assessment of how economists analyze critical issues in the global IPR system arising largely through private use of the regime. This is the subject of chapter 4, which focuses on several key issues. For example, global patent offices are awash in patent applications and need to improve means of collaborating in reducing their burdens. More importantly, there is a strong public interest in seeing these offices establish a global and accessible database of all patent applications to greatly increase the transparency and utility of the system. Another critical issue is how to encourage standard-setting organizations in industries with interlocking and overlapping technical standards to collaborate and increase access to their patented specifications. China's ambitious policy is both instructive and disconcerting in this context.

Yet another example is the question of exhaustion of IPRs, which determines the legal scope of parallel imports. Economists have uncovered a number of complexities here, making it a far more interesting subject than simple arbitrage might suggest. Chapter 4 also reviews the economics and law of protecting geographical indications, which are a particular form of intellectual property for high-quality goods from specific regions. In this case the economics are not particularly definitive, except where the attempts to protect involve asserting property rights against names already in the public domain. This discussion may therefore be of greater interest to legal scholars and policymakers. A subsequent section should be of considerable general interest, however, since it focuses on the thorny problems of selling digital goods to multiple countries in the face of considerable threats from downloading. After reviewing strategic—and often self-defeating—attempts to manage these problems on the part of content providers, I offer some thoughts on how the world's copyright infrastructure might be transformed to achieve a solution that is better all around.

A fourth objective is to confront, in chapter 5, the complex interfaces between the provision of public goods and the exclusive private rights established by IPRs. These are difficult questions and I generally limit the discussion to areas in which economic analysis is helpful. For example, although the policy issues are addressed, I say relatively little in the book about developing new forms of IPRs to protect traditional knowledge and cultural expressions, since it is hard to say much about the incentive effects of elucidating private rights in collective and long-standing knowledge.

Thus, after a review of the economics of compulsory licenses, variable patent standards, and other forms of "TRIPS flexibilities" I turn to four critical areas of public policy and their relationships with IPRs: public health and medicines, environmentally sound technologies, agriculture and preservation of the genetic commons, and global access to scientific knowledge. There are three primary points. First, by themselves IPRs can raise access barriers in each of these areas, though the evidence is mixed. Second, however, appropriately structured rights can be essential for supporting contracts to achieve meaningful and appropriate technology transfer.

Third, IPRs rarely can be counted on to achieve the optimal provision and distribution of public goods. Rather, they need to be a component of overall public and public-private strategies to expand resources for financing R&D, transferring technologies, and adapting them to local use. I offer some policy recommendations in these areas, ranging from practical ideas rooted in microeconomics to more abstract, though economically defensible, concepts such as a treaty for improving access to basic scientific knowledge. I hope that policymakers, NGOs, and economists alike will find these ideas challenging and worth thinking about deeply.

The world has reached a significant crossroads regarding the definition and use of intellectual property rights in the 21st century. Too often, IPRs are considered an end in themselves, whether as an imperfect measure of innovation performance or, more fundamentally, a strategic means of protecting the competitive positions of existing firms from new competition. It is time to recast intellectual property rights in their proper role as a means to several ends, including promoting innovation and creativity, diffusing new goods and ideas around the world, enhancing cultural opportunities, encouraging economic development, and even reducing poverty. All of these are possible with a forward-looking and expansive rebalancing of the global policy regime, the subject of the concluding chapter.

KEITH E. MASKUS
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Introduction: The Big Stakes in Selling Knowledge

The world is an astonishingly creative place. African musicians, Peruvian textile designers, Indian movie studios, Australian wineries, and British authors all have creations to delight us and stories to divert us. Chinese biotechnology enterprises, Japanese hybrid automobile developers, US university scientists, and global pharmaceutical concerns offer applied and basic knowledge that pushes the information frontier forward. Society gains immeasurably from these and thousands of additional intellectual pursuits, which need to be nurtured and shared. Or perhaps they should be owned and sold.

Politicians and pundits everywhere agree: We live in a global knowledge economy and the key to "winning the future" is to excel at turning what we discover and learn into marketable new products and technologies. Innovation, adaptation, and the use of these new technologies are the primary drivers of growth within economies and across international borders.[1] Higher-quality technical inputs reduce production costs and spur further innovation. New medicines treat our maladies, and novel technologies offer us alternatives to fossil fuels as energy sources. Software permits interpersonal connections on a scale never before seen. Consumers benefit greatly from new varieties of goods and digital entertainment products. In the 21st century, knowledge truly is the basis on which human life will improve.

How does a society encourage this creation and use of knowledge and then generate income and jobs from it? To be sure, education, creativity, market

1. Economists have taken to referring to dynamic competition among technologically advanced firms as an "innovation arms race," with its connotations of success and defeat, and survival and destruction (Baumol 2002).