

Intellectual Property as a Driver of Growth and Competitiveness: Challenges and Progress

World Intellectual Property Forum

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About ITIF

- The world's leading science and technology policy think tank.
- Supports policies driving global, innovation-based economic growth.
- Focuses on a host of issues at the intersection of technology innovation and public policy across several sectors:
 - Innovation and competitiveness
 - IT and data
 - Telecommunications
 - Trade and globalization
 - Life sciences, agricultural biotech, and energy



IPRs Are Vital to Innovation, As They:

1. Create incentives for domestic innovation.
2. Enable a virtuous cycle of innovation.
3. Induce knowledge spillovers that help others to innovate.
4. Boost domestic levels of R&D, exports, and FDI.
5. Promote the international diffusion of technology, innovation, and knowhow.

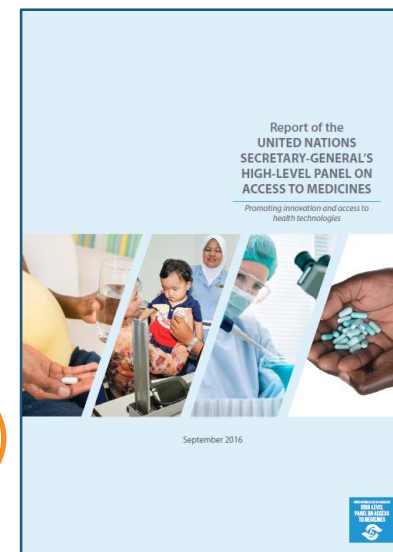
Challenge: Lack of Respect for Intellectual Property Rights

- IP theft costs the U.S. economy \$600 billion annually; cybercrime, including espionage, IP, and trade secret theft, may reach \$6 trillion per year by 2021.
- The number of non-tariff barriers (NTBs) and other TBTs reported to the WTO reached an all-time high in 2018; share of goods impacted up 50% since 1997.
- Increased use of compulsory licensing in the life-sciences sector.
 - Ecuador, India, Indonesia, Malaysia, Russia, and South Africa have introduced compulsory licensing legislation and applied it to innovative medicines.
 - Colombia, Chile, and Peru have considered doing so.



Challenge: Growing Narrative That IP Harms Societal Interests

- E.g., UN High-Level Panel on Access to Medicines postulated a “policy incoherence” between IPRs, innovation, and affordable access to medicines.
- Asserted that “patents are the main cause of higher costs for medicines in low- and –middle income countries” and that the IP system “limits research and disadvantages local producers.”
 - Yet strengthening IPRs has actually resulted in better access to medicines in developing countries.
 - Probability of drug being commercially available lowest in countries with weak patent protection and weak/no market exclusivity. (Brandt)



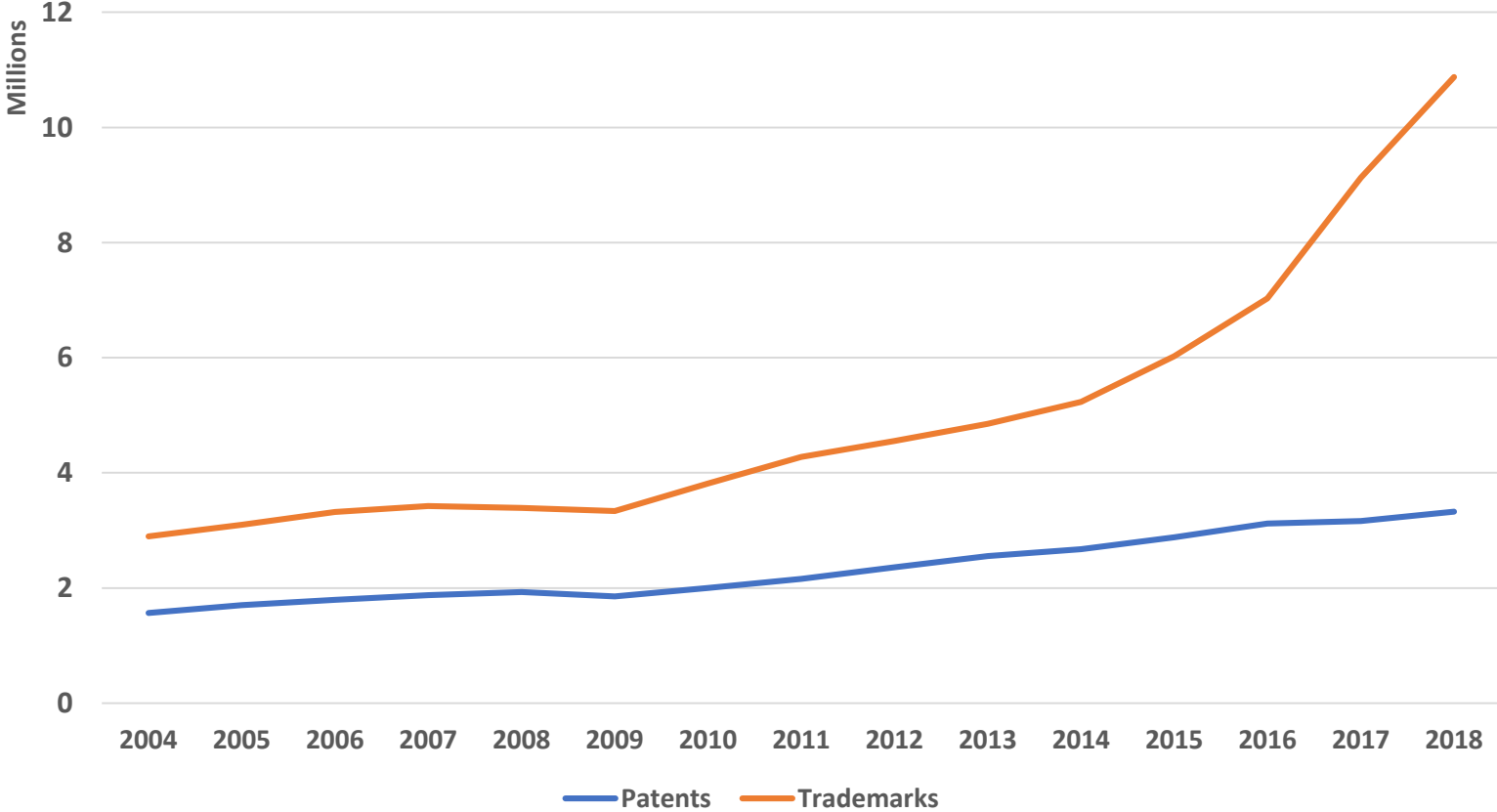
Challenge: Rise of IP Skeptics in International Organizations

- UNCTAD: “Strong IP protection may have little or no impact on innovation, while reducing the diffusion of foreign inputs, techs, and raising their costs.”
- UNCTAD: Robust IP rules stifle economic growth by restricting developing nations’ “policy space” for state-led industrial development strategies.
- World Bank: “A fully implemented TRIPS Agreement would transfer over \$20 billion of “rents” from developing to developed countries.”



Progress: Volume of Global IP Activity At All-time High

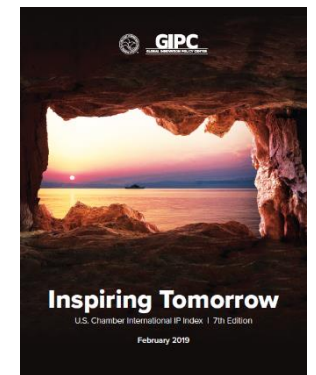
Global Patent and Trademark Applications, 2004-2018



Source: World Intellectual Property Organization, WIPO Statistics Database

Progress: Countries Steadily Improving IP Environments

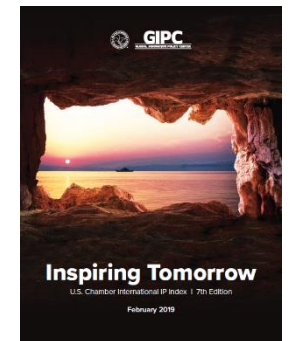
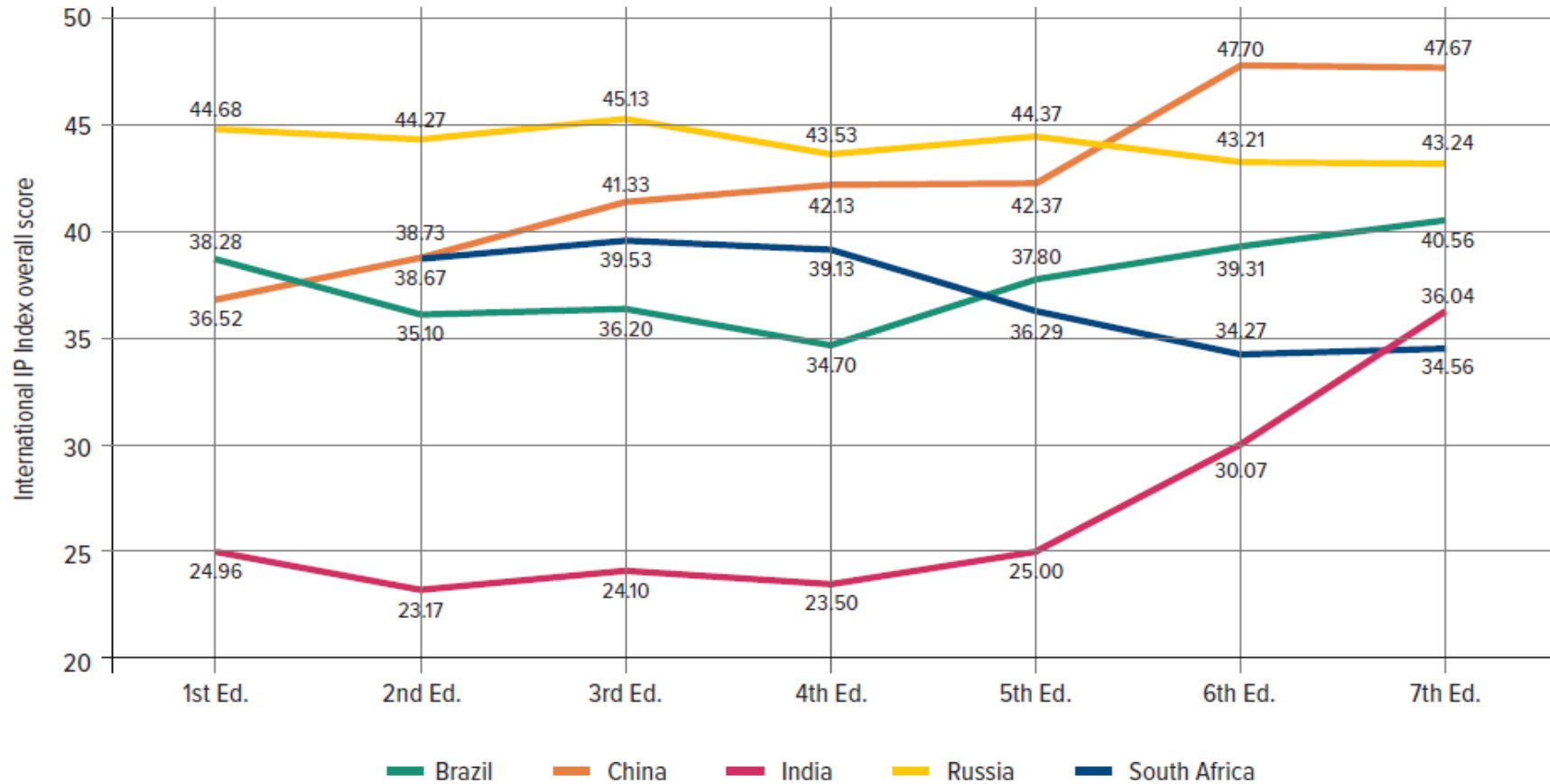
- Countries achieved a 2.1% net increase in scores from the 2nd to 6th edition, and a 7.9% net increase in scores from the 6th to 7th edition.
- For 2019, India increased its score 20%, Argentina 15%, and Mexico 10%.
- More countries joining WIPO, digitalizing patent services, joining patent prosecution highways, introducing cooperative patent classification systems, speeding patent examinations and reducing backlogs.



Source: U.S. Chamber of Commerce, Global Innovation Policy Center, *2019 International IP Index*

Progress: Countries Steadily Improving IP Environments

Overall total score, percentage of available scores, 1st to 7th Edition, BRICS



Source: U.S. Chamber of Commerce, Global Innovation Policy Center, *2019 International IP Index*

Progress: IP Enabling Life-sciences Innovations Worldwide

Innovate4Health

How Innovators Are Solving Global Health Challenges
Editors: Mark Schultz, Stephen Ezell, and David Lund



Featuring Original Case Studies Authored By:

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IPRs Create Incentives for Life-Sciences Innovation

Ryan: “Patents provided incentives for biomedical technology entrepreneurs to make risky investments into innovation in Brazil.”

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Patent Incentives, Technology Markets, and Public-Private Bio-Medical Innovation Networks in Brazil

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Summary. — Contested is whether patent laws promote indigenous technology invention and innovation in developing countries. Brazil reformed its patent laws in 1996 to permit pharmaceutical product patents. Study of five post-patent law reform bio-medical technology invention and innovation projects in the state of Sao Paulo supports the propositions that patents provide incentives to Brazilian bio-medical technology entrepreneurs to make risky investments into innovation and that patents facilitate technology markets among public-private technology innovation networks, both Brazilian collaborations and North-South collaborations. Brazil enacted a technology law in 2005 that encourages public-private technology innovation through patent incentives and patent-facilitated technology markets.

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Key words — technology innovation, technology networks, patents, intellectual property rights, bio-medical technology, Brazil

1. INTRODUCTION

The 1994 World Trade Organization Agreement regarding Trade-Related Intellectual Property Rights obliges all WTO members to meet certain minimum standards of intellectual property law and enforcement and this means that scores of developing countries must provide higher levels of protection than has been their policy and practice in the past. Contested is whether patent laws promote indigenous technology innovation in developing countries. Runge (2006) rejects enclosure through intellectual property protections to promote technology progress in the North and says that the countries of the South have even more to lose from patent-based enclosure. Evans (2005) calls for an open science model for technology progress in developing countries. The development model should be non-proprietary and non-intellectual property-oriented. A developing country-based scholar says that stronger intellectual property rights in countries such as her Colombia will inhibit scientific research (Forero-Pineda, 2006). She argues that developing country scientists should participate in international professional networks to achieve science and technology advancement.

Though these scholars do not provide empirical evidence to support their arguments, they do ask important questions for development studies. Research universities, scholarly journals, and science conferences are the institutions that drive scientific progress (Pyenson & Sheets-Pyenson, 1999), but are these institutions sufficient to drive national technology innovation in developing countries (or developed countries, for that matter)? Technology innovation drives long-run national economic growth (Romer, 1986, 1990). Technology stasis leads to national economic stagnation; technology progress leads to national economic growth (Grossman & Helpman, 1991), so it is important to identify the institutional frameworks that best promote national technological innovation in developing countries. Do patent laws provide incentives to entrepreneurs in developing countries to make risky investments into technology innovation? Do patent laws facilitate the development of technology markets among public-private technology innovation networks? Do patent laws facilitate North-South technology innovation collaborations?

This is a study of invention and innovation in national technology development.

“Invention is the first occurrence of an idea for a new product or process, while innovation is the first attempt to carry it out into practice. ... While inventions may be carried out anywhere, for example in universities, innovations occur mostly in firms, though they may also occur in other types of organizations, such as public hospitals. To be able to turn an invention into an innovation, a firm normally needs to combine several different types of knowledge, capabilities, skills, and resources” (Fagerberg, 2005, p. 4).

Post-patent law reform bio-medical technology invention and innovation in Brazil is studied here. Brazil has a long-established pharmaceutical industry, but Brazilian bio-medical R&D traditionally meant that their public and private drug-makers reverse-engineered international pharmaceuticals so that they could manufacture and market medicines and vaccines innovated in the North to the Brazilian marketplace. Brazilian pharmaceutical makers were at liberty to reverse-engineer, manufacture, and market products under patent in the United States and Europe because pharmaceutical compositions were not patentable subject matter in Brazil. But, in 1996 the Cardoso administration led the Brazilian congress to amend the patent laws with Law No. 9,279 to allow for the patentability of pharmaceutical product patents so that, subject to procedural processes and some restrictions, only patent-holders or their licensees would be permitted to market under-patent medicines.

Bio-medical technology invention and innovation in the state of Sao Paulo is the focus of study. The state of Sao Paulo is the wealthiest state of Brazil, representing some 40% of the gross domestic product of the country, and is the main scientific and business center of the country. Federal research support and “the strong support by the state government makes the state

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Progress: Trade Agreements Enhancing Global IP Protections

- Global cross-border exports of knowledge- and technology-intensive goods and services exceed \$4 trillion; account for over ½ global trade.
- Recent bilateral and multilateral trade agreements strengthening IP:
 - USMCA: 10-years of data exclusivity for biologics, patent-term extension, copyright protection for author's life + 70 years.
 - CPTPP: Protections for algorithms and source code, expanded trade secret protections.
 - Canada-EU FTA: Up to 8 years of data protection for pharmaceuticals.

Policy Recommendations

1. Pursue a whole-of-government “all-points strategy” to engage globally on IP challenges.
2. Expand non-agreement cooperation with countries effectively linking IP to innovation/economic growth.

E.g., U.S. PTO Office of International Patent Cooperation created a new division supporting global outreach.

3. Increase capacity building/technical assistance.

E.g., Countries commit approximately \$25 million annually to the WIPO Funds-in-Trust (FIT) program.

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The Way Forward for Intellectual Property Internationally

STEPHEN EZELL AND NIGEL CORY | APRIL 2019

Countries with robust IP rights and protections must recognize that new energy, new tactics, and a new strategy are needed to encourage other nations to contribute more and detract less from global innovation.

KEY TAKEAWAYS

- IP rights have come under attack from a loose coalition of academics, nongovernmental organizations, multilateral groups, and others whose opposition threatens to undermine innovation, growth, and progress on key global challenges.
- IP opponents make specious arguments to falsely portray IP as a tool to benefit large corporations and developed countries at the expense of human freedom, the diffusion of ideas, and growth in developing countries.
- To maximize global innovation, the international community needs to forge a stronger and more wide-ranging consensus on the importance of IP to every country—developed and developing alike.
- Countries with robust IP rights should work together on all fronts to push back against opponents, make the case that IP is central to global progress, and strengthen the international framework of IP rules, norms, and cooperation.

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Thank You!

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