

# **INTERNATIONAL TRADEMARK AND PATENT INDEX**

## **2021**

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# ACKNOWLEDGMENTS

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The International Trademark and Patent Index 2021 offers a tool for measuring the protection of trademarks and patents around the world. I would like to thank all those who contributed to the development of this project. First, my true appreciation goes to Dr. Walter G. Park for creating and developing the Trademark Index and the Patent Index, for his detailed and constructive comments, and his academic partnership with PRA. I am especially thankful to Dr. Sary Levy-Carciente for providing useful suggestions and guidance about these two Indices. Last but not least, I would like to thank Lorenzo Montanari, executive director of Property Rights Alliance (PRA) for his mentoring and his efforts to promote and advocate Intellectual Property Rights around the world. The International Trademark and Patent Index 2021 is possible thanks to inspiring people of PRA and their work.

## 1. FOREWORD

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The International Trademark Index (ITI) and the International Patent Index (IPI) are two updated publications of the Property Rights Alliance (PRA) in partnership with Prof. Walter Park, who created the methodology. Starting with the 2021 edition, PRA, in close partnership with Prof. Walter G. Park, will be updating both the ITI and IPI every two years.

PRA is a research advocacy organization based in Washington, D.C., dedicated to the promotion of intellectual property rights and innovation around the world. During 2020 and 2021, PRA worked to compile the data for trademark legislations from 139 countries and for patent legislations from 122 countries around the world. The selection of countries was determined only by the availability of sufficient data.

Intellectual Property Rights (IPR), including trademarks and patents, encourage creative activity for the benefit of a free society. Innovations are protected through IPR and inventors afford an opportunity to derive fair returns from their investments. The acquisition of Intellectual Property Rights is one of the primary tools for incentivizing creators in a modern economy. Property rights are human rights that spark innovation and nurture economic growth. It has been the most effective mechanism to guarantee civil rights and civil liberties. Protecting individual liberty is the fundamental reason for a system of strong private property rights.

Throughout the unprecedented pandemic crisis, there has been a continuing debate about patents for medicines. The right balance provides early access to affordable medicines with sufficient flexibility to protect intellectual property (IP). Patents are a part of the solution for the COVID-19 vaccine. Dismantling patent protection is not correlated with IP. In fact, scientists developed vaccines in record time because of the security and resources provided by IP systems.

A trademark recognizes the company's ownership of the brand and legally differentiates it from all other products of its kind. It is an efficient commercial communication tool to capture customer attention and make businesses, products, and services stand out. Trademarks safeguard the reputation of businesses and consumers, making them an important part of running a successful company. With a trademark, a business retains exclusive rights to mark its products, with no one

else being allowed to use its symbol, name, or slogan in that region. Trademarks are used as a way of protecting consumers because trademarked companies often work harder to provide quality services and products in order to protect their brand.

Patents provide protection against competitive assets in the business field, giving the right to exclude others from exploiting the patented technology. The inventor must disclose the invention in return for obtaining a time-limited exclusivity so that others may know how to replicate it. Effective patent protection stimulates research and is a key requirement to overall economic growth. Patents have long been considered essential incentives to foster innovation. For both industry and small businesses, patents can convey their innovative spirit as concrete assets of value. The data of the International Trademark and Patent Index 2021 give insight to the protection of intellectual property in each country.

## 2. STRUCTURE-METHODOLOGY

An index of intellectual property rights (IPR) is based on whether various features of IPR systems exist in the laws or regulations. The level of IPR protection in country  $n$  at time  $t$  could equal:

$$\theta_{nt} = \omega_1 \theta_{nt}^1 + \dots + \omega_J \theta_{nt}^J$$

where  $\theta_{nt}^1, \dots, \theta_{nt}^J$  are the different categories of an IP system, and  $\omega_i$ 's the weights of each category. Such an approach is developed in Ginarte and Park (1997) and Park (2008) which examine six major categories ((1) duration of protection, (2) coverage (e.g., what is patentable), (3) membership in international treaties, (4) enforcement mechanisms, (5) restrictions on patent scope, such as compulsory licensing and (6) patent applications). They assign equal weights to each of these categories ( $\omega_i = 1$ ), but other researchers or practitioners may want to assign different weights. Reynolds (2003) and Park (2005) further develop indices of trademark protection using similar methodologies.

### 2.1 General Principles

First, the ITI and IPI indices are designed to capture the strength of national IPR laws, not the quality or efficiency of IPR protection. From a social welfare point of view, stronger IPRs create both costs and benefits. Thus, the Index is composed of features measuring the strength of intellectual property rights rather than factors that contribute to the quality or efficiency of IPR systems.

Second, a guiding principle in choosing legal features is not to be exhaustive but selective: that is, to choose those legal features that yield maximum variability across countries. Adding information to the Index that marginally adds variability also dilutes the contribution of the rest of the features in the Index. The marginal value of adding such a factor needs to be weighed against the marginal reduction in value of the previous factors. Furthermore, the information must be widely available across countries. A legal factor may be an important element in the strength of IPR laws (e.g. doctrine of equivalents), but information about it may only be available for a few countries. Including it will make it difficult to make the Index comparable across countries.

Lastly, it is important to avoid making biased judgements about whether a country's measured protection level is too low or too high according to the country's level of economic development; the *a priori* assumption being that richer countries should have stronger levels of IP protection. In general, this is the case, but there are instances where it is not (i.e. some rich countries have IP weak systems, and some poor economies have strong systems). In such cases, other factors are not held constant (for example, richer economies with weak IP systems may have good educational systems to compensate, or poorer economies with strong IP systems may follow poor fiscal and monetary policies which offset the effects of IPRs). In all these cases, it should be understood that the IPR indices are not measures of economic development. They may be important determinants of development but are not themselves indicators of it.

## 2.2 The International Trademark and Patent Index 2021

As an overview, the Trademark Index consists of four clusters: (1) coverage; (2) membership in treaties, and (3) procedures (which aggregate duration, restrictions, and enforcement mechanisms) and (4) Trademark applications. Each of the clusters contains a combination of variables that will then be averaged to come up with a cluster score. These clusters can then be combined to create the overall Index. The procedures cluster represents how procedural elements affect the strength of trademark laws from country to country. The cluster contains nine variables that each represents a different aspect of trademark law. In general, procedures in the cluster should strengthen a trademark holder's position.

The International Patent Index 2021 follows the same methodology – the unweighted sum of six separate scores for: coverage (inventions that are patentable), membership in international treaties, duration of protection (0 to 20 years), enforcement mechanisms, restrictions (for example, compulsory licensing if a patented invention is not sufficiently exploited) and patent applications. This Index measures the strength of patent protection around the countries involved and not the quality of patent systems. The overall grading scale of the International Trademark Index and Patent Index is [0-1], where 1 is the highest value for each cluster and 0 is the lowest value. The variables for the Indices are extracted from all relevant laws published in WIPO's journal, *Intellectual Property*, between 1960 and 2021.

### Duration

For this category, the statutory duration of protection (in years) is compared to an international standard, namely that of TRIPS. Under TRIPS, the minimum standard duration is 20 years for patents (from the date of patent application) and 7 years for trademarks. Thus, for each of these IPR, a score is obtained (ranging from zero to one) which equals the statutory duration of protection as a fraction of the international standard.

### Coverage

IP regimes are stronger if they provide protection for a wider range of subject matter, such as computer programs, genetic innovations, and shapes of symbols. For each IPR – patents and trademarks – a score will be derived which indicates the fraction of a list of subject matter that can be protected. The coverage cluster measures the range of trademarks and patents that can be registered and protected. In general, the more items protected in a law, the stronger the law is for trademark holders.



For example, the list of subject matter for patent protection contains software, plant and animals, food, chemicals, pharmaceuticals, business methods, biotechnology, and surgical products. The score for patent coverage will be the fraction of these 8 fields that are patentable under domestic law. Of course, these eight fields represent just a small part of the universe of patentable subject matter; others include industrial machinery, fixed construction, and so forth. Again, the principle here is not to cover every field but to select those areas that provide sufficient variability in coverage across countries and over time. Generally, the 8 fields that have been selected for consideration are those that have been the subject of much international policy debate, such as patent protection for drugs in developing countries, software, and business methods, and that vary in patentability across jurisdictions.

For trademark protection, the list of subject matter contains service marks, collective marks, certification marks, colors, shapes, and protection for well-known marks.<sup>1</sup> Countries vary over whether these types of marks can be granted trademark protection. *Service marks* are words, names, symbols, or devices that identify services. *Certification marks* are words, names, symbols, or devices that certify the origin (e.g. region) of types of goods, such as Champagne. These marks help identify the type of product. *Collective marks* identify trade associations or membership in some cooperative or other organization. The association (or its independent members) may be responsible for some product(s). The collective mark should tie the product(s) to the reputation of the collective. Well-known marks are those with an international reputation. Laws that protect such marks prohibit other agents from registering a mark that would benefit from (or free ride on) the reputation of an existing brand, name, or symbol.

The nature of a good should also not be an obstacle towards obtaining a trademark (as required by TRIPS Article 15.4, Part II), meaning that trademarks should not be denied on the basis of prejudicial views about the product (e.g., protection for tobacco). While this requirement is not a subject matter nor does it describe a type of mark, it does enhance the level of protection that any particular mark can receive if the underlying good or service identified by the mark is not subject to conditions. The trademark coverage score will be the fraction of these seven features that are available for trademark protection under the law. These ‘fractions’ rate the extent to which domestic IPR laws cover a wide range of different types of innovations and business symbols.

## Restrictions

In many IP systems, intellectual property laws create rights and obligations. In certain cases, IP laws impose conditions or limitations which restrict the exercise of IPRs. This category measures the extent to which IP laws do not impose certain restrictions. That is, IP laws are stronger if they do not impose such restrictions (or weaker if they do). These conditions or limitations may well improve social welfare or economic efficiency, or they may not; but from the point of view of the rights holders, these conditions, limitations, or restrictions reduce the strength or level of protection.

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1. Since all jurisdictions with trademark laws allow words, names, symbols, devices, or any combination, to be trademarked, it was not necessary to list these under the coverage category. In some cases, color, sounds, fragrances, or 3-dimensional objects, can be registered, but the cross-country variations in the protection of these are small.

For example, in the case of patent rights, working requirements (i.e., requirements to practice the invention within a certain time period) impose a restriction on patent holders, and weaken the strength of patent rights compared to a situation where patent holders are free to exploit the invention or not. Working requirements, from the point of view of the inventor, are restrictive because the patentee might either be financially unable to work the invention or find the market to be such that working is not profitable at the time. In the case of holding a foreign patent, the patentee might prefer to manufacture in her home country and then export her products. On the other hand, some patent regimes operate on the premise that the purpose of a patent is not to profit inventors but to bring economic value to the community. For this reason, in some countries, if a patent is not worked within a certain time, the patentee is required to give a license to a third party willing and able to work the patent (in exchange for a "reasonable" royalty).

Compulsory licensing weakens the rights of the patent holders. Licensing to third parties may be mandated if the patented technology is insufficiently exploited or worked in the local economy by a local firm or by importation, or if a third party is unable to obtain a license on affordable terms. In some countries, a patent right may be revoked for inadequate working or if the technology is deemed to be in the 'national' interest. The patent restriction score (ranging from zero to one) will be the fraction of these three elements (working requirements, compulsory licensing, and revocation) that are not provided for under the law. It will be important, however, not to penalize countries that revoke a patent if the patent holder's patent is found to be invalid or that issue a compulsory license for abuses by the patent holder. The score should reflect the extent to which rights can be abridged, not the extent to which they are protected unconditionally.

Trademark rights are subject to restrictions as well. IP laws may impose restrictions on the licensing of trademarks; for example, imposing quality standards on goods produced by the licensee (i.e., produced under a license from the trademark owner). Again, such standards may be in the public interest, but the standards may reduce demand for a license and thereby the potential earnings of a licensor. The assignment of trademarks may also be subject to restrictions; for example, a trademark may not be transferred without, or independently of, the underlying business. IP laws may also impose linking requirements, whereby a foreign trademark be linked to a domestic (locally owned) producer. Lastly, trademark laws may have "use or lose" provisions; that is, a loss of rights due to failure to exploit the trademark right adequately. This loss of protection due to non-use may extend to those marks that depended on their 'well-known marks' status. Trademark rights may not be renewed unless proof of use is established. The trademark restriction score (ranging from zero to one) will be the fraction of these four elements (licensing requirements, assignment conditions, linking requirements, and conditions of use) that are not provided for under the law.

## Enforcement

In this category, the selected conditions are the availability of preliminary injunctions, contributory infringement pleadings, burden-of-proof reversals, border measures, and criminal sanctions.

While litigation, arbitration, and settlement comprise different enforcement 'routes' should infringement occur, patent holders may have recourse to a number of statutory provisions which can aid in enforcement. Preliminary injunctions, for example, are pre-trial actions that require the accused infringer to cease the production or use of the patented product or process during the trial.

Preliminary injunctions protect the patentee from infringement until a final decision is made in a trial. Contributory infringement refers to actions that do not in themselves infringe a patent right but cause or otherwise result in infringement by others. Thus, contributory infringement permits third parties also to be liable if they contribute negligently to the infringement. Burden of proof reversals put the onus on the accused to prove innocence. Given the difficulty IP owners may have of proving that others are infringing on their ideas, expressions, or symbols, the shift in burden can be a powerful enforcement mechanism. Enforcement can also be more effective if the laws put in place border security measures (where customs authorities can prevent the importation of infringing goods) and levy sanctions and other deterrents on IP infringement.

### *IP Treaties and Agreements*

Various treaties are covered, each of which is a binary variable: yes/no to whether a country is a member at any point in time. The TRIPS agreement is the most comprehensive IPR agreement to date. The Patent Cooperation Treaty (PCT) offers a system for international priority filing and claiming of a right to an innovation. The Paris Convention establishes global and national protocols establishing a Union for the protection of industrial property. The Union for the Protection of Plant Varieties and Budapest Treaty protect agricultural, biotechnological innovations, and micro-organisms, along with a system for registration and deposits. The Trademark Treaty streamlines the process for applying for protection for marks. It also permits one application to apply to several different classifications as defined by the Nice (1957) agreement (articles 3 and 6). Other important trademark related treaties include the Madrid (1891), Lisbon (1958), and Vienna (1973) agreements.

### *Trademark and Patent applications.*

Our last component of each index is the number of non-resident filings, normalized by the maximum filed in a country. These filings gauge how heavily the IP system is used and reflect the demand for protection taking into consideration market size and strength of existing IP protections. We utilized non-resident records by companies and agents since filings of inventions and brand names tend to be more selective and have a higher value, globally.

## 3. THE INTERNATIONAL TRADEMARK INDEX 2021

COUNTRY	RANKING	POINTS (TOTAL)	TREATIES	COVERAGE	PROCEDURE	TRADEMARK APPLICATIONS
United States	1	0.8794	0.67	1	1	0.8478
China	2	0.8625	0.67	1	0.78	1
Austria	3	0.7594	1	1	1	0.0378
Italy	4	0.7344	1	1	0.89	0.0479
United Kingdom	5	0.7302	0.83	1	0.78	0.3109
Hungary	6	0.7265	1	1	0.89	0.0162
France	7	0.7133	1	1	0.78	0.0734
Sweden	8	0.7122	0.83	1	1	0.0191

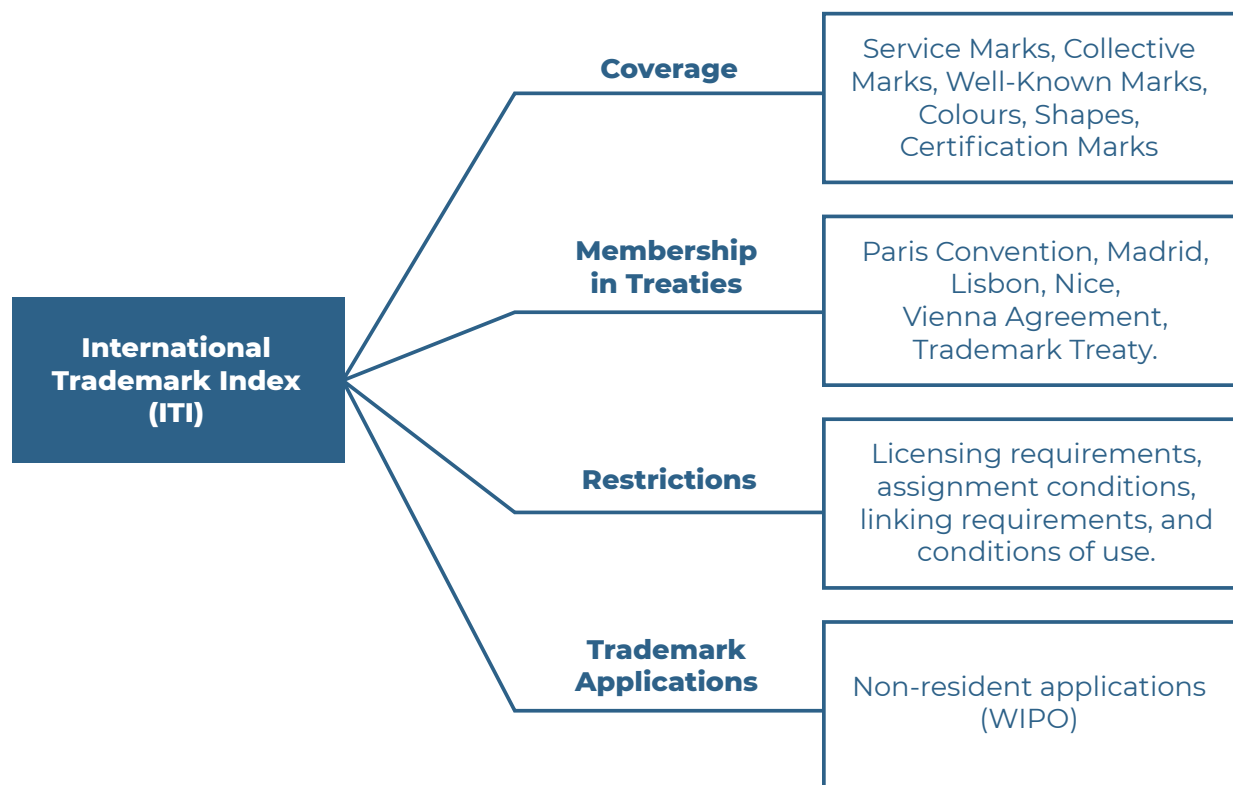
COUNTRY	RANKING	POINTS (TOTAL)	TREATIES	COVERAGE	PROCEDURE	TRADEMARK APPLICATIONS
Germany	9	0.7053	0.83	1	0.89	0.1012
Portugal	10	0.7007	1	1	0.78	0.0231
Romania	11	0.7002	1	1	0.78	0.02095
Russia	12	0.7001	0.67	1	0.89	0.2404
Mexico	13	0.6996	0.83	1	0.78	0.1884
Moldova	14	0.695	1	1	0.78	0
Poland	15	0.6879	0.83	1	0.89	0.0317
Serbia	16	0.6805	1	1	0.67	0.0521
Switzerland	17	0.6804	0.83	1	0.67	0.2219
Turkey	18	0.6736	0.67	1	0.89	0.1344
Latvia	19	0.6711	0.67	1	1	0.0146
Belgium	20	0.6625	0.83	1	0.78	0.04
Luxembourg	20	0.6625	0.83	1	0.78	0.04
Spain	21	0.6624	0.83	1	0.78	0.0398
Monaco	22	0.6597	0.83	1	0.78	0.029
Albania	23	0.6592	0.83	1	0.78	0.027
Australia	24	0.6591	0.5	1	0.89	0.2465
Israel	25	0.6573	0.67	1	0.89	0.0693
Croatia	26	0.6564	0.83	1	0.78	0.0157
Armenia	27	0.648	0.67	1	0.89	0.0321
Netherlands	28	0.635	0.83	1	0.67	0.04
Tusnia	29	0.6339	0.83	1	0.67	0.0356
Montenegro	30	0.633	1	0.83	0.67	0.032
Bulgaria	31	0.6291	0.83	1	0.67	0.0167
Norway	32	0.6287	0.5	1	0.89	0.1251
Egypt	33	0.6274	0.67	1	0.78	0.0588
North Macedonia	34	0.625	0.83	1	0.67	0
Malaysia	35	0.6215	0.5	1	0.89	0.096
Czech Rep.	36	0.6176	0.67	1	0.78	0.0207
Denmark	37	0.617	0.67	1	0.78	0.0182
Japan	38	0.6168	0.67	0.83	0.67	0.2972
New Zealand	39	0.615	0.33	1	1	0.1302
Canada	40	0.6142	0.33	0.83	0.89	0.4067
Trinidad	41	0.6141	0.67	1	0.78	0.0066
Republic of Korea	42	0.6127	0.67	1	0.56	0.221
Morocco	43	0.6105	0.83	1	0.56	0.052

COUNTRY	RANKING	POINTS (TOTAL)	TREATIES	COVERAGE	PROCEDURE	TRADEMARK APPLICATIONS
Slovenia	44	0.61	0.83	0.83	0.78	0
Slovakia Republic	45	0.6023	0.83	1	0.56	0.0193
Sri Lanka	46	0.6018	0.5	1	0.89	0.0147
Brazil	47	0.6011	0.5	1	0.78	0.1247
Cuba	48	0.5993	1	0.83	0.55	0.0172
Ireland	49	0.5975	0.5	1	0.89	0
Ukraine	50	0.5925	0.83	0.67	0.77	0.1002
Uruguay	51	0.5902	0.67	1	0.67	0.02106
Kazakhstan	52	0.5859	0.67	0.83	0.78	0.0637
Greece	53	0.585	0.67	1	0.67	0
Tunisia	53	0.585	0.67	1	0.67	0
Lichtenstein	53	0.585	0.67	1	0.67	0
Belarus	54	0.5848	0.67	0.83	0.78	0.0592
Kuwait	55	0.576	0.17	1	0.56	0
Uzbekistan	56	0.5751	1	0.83	0.44	0.0306
Kyrgystan	57	0.57457	1	0.83	0.44	0.0283
Colombia	58	0.5745	0.33	1	0.89	0.078
Lithuania	59	0.5736	0.5	1	0.78	0.0147
Jamaica	60	0.5734	0.5	1	0.78	0.0137
Peru	61	0.5553	0.5	1	0.67	0.0512
Jordan	62	0.555	0.5	1	0.56	0.162
Kenya	63	0.5499	0.5	1	0.67	0.0297
Costa Rica	64	0.5469	0.5	1	0.66	0.0277
Mozambique	65	0.5465	0.5	1	0.67	0.0161
Iran	66	0.5447	0.67	1	0.44	0.0689
South Africa	67	0.5432	0.33	1	0.78	0.06299
Nicaragua	68	0.5425	0.5	1	0.67	0
Cyprus	68	0.5425	0.5	1	0.67	0
Eswatini	68	0.5425	0.5	1	0.67	0
Algeria	69	0.5423	0.67	0.83	0.67	0
Singapore	70	0.5421	0.33	1	0.67	0.1682
Chile	71	0.5414	0.33	1	0.78	0.0559
Barbados	72	0.5282	0.33	1	0.78	0.0031
Malta	73	0.5276	0.33	1	0.78	0.0007
Bahrain	74	0.5269	0.5	1	0.56	0.0476
Iceland	75	0.5227	0.17	1	0.89	0.031

COUNTRY	RANKING	POINTS (TOTAL)	TREATIES	COVERAGE	PROCEDURE	TRADEMARK APPLICATIONS
Thailand	76	0.5214	0.17	1	0.78	0.1358
Dominican Republic	77	0.5206	0.5	1	0.56	0.0224
Georgia	78	0.5082	0.5	0.83	0.67	0.0331
Vietnam	79	0.5076	0.33	1	0.67	0.0306
Sudan	80	0.5035	0.33	1	0.67	0.0143
Estonia	81	0.5032	0.33	1	0.67	0.0129
Indonesia	82	0.5024	0.33	0.83	0.67	0.1798
Tanzania	83	0.5	0.33	1	0.67	0
Pakistan	84	0.493	0.17	1	0.78	0.0223
Honduras	85	0.4923	0.17	1	0.78	0.0193
Mongolia	86	0.4906	0.5	1	0.44	0.0227
Bolivia	87	0.4877	0.17	1	0.78	0
Saudi Arabia	88	0.4867	0.33	1	0.56	0.0568
Azerbaijan	89	0.4818	0.5	0.83	0.56	0.0374
Oman	90	0.4774	0.33	1	0.56	0.0197
Finland	91	0.4763	0.33	1	0.56	0.0152
Malawi	92	0.4725	0.33	1	0.56	0
Brunei Darussalam	93	0.4644	0.17	1	0.67	0.0177
Bangladesh	94	0.4643	0.17	1	0.67	0.0175
Botswana	95	0.4628	0.17	1	0.67	0.0112
Paraguay	96	0.46	0.17	1	0.67	0
Argentina	97	0.4577	0.33	1	0.44	0.061
Panama	98	0.449	0.33	1	0.44	0.026
United Arab Emirates	99	0.4456	0.17	1	0.56	0.0525
Burkina Faso	100	0.4425	0.5	0.83	0.44	0
Gabon	100	0.4425	0.5	0.83	0.44	0
Haiti	100	0.4425	0.33	0.83	0.61	0
Liberia	100	0.4425	0.33	1	0.44	0
Zambia	101	0.4362	0.17	1	0.56	0.015
El Salvador	102	0.4357	0.17	1	0.56	0.013
Madagascar	102	0.4357	0.17	0.67	0.89	0.0129
Gambia	103	0.4345	0.17	1	0.56	0.0083
Ghana	104	0.432	0.17	1	0.56	0
Zimbabwe	104	0.432	0.17	1	0.56	0
Uganda	104	0.432	0.17	1	0.56	0

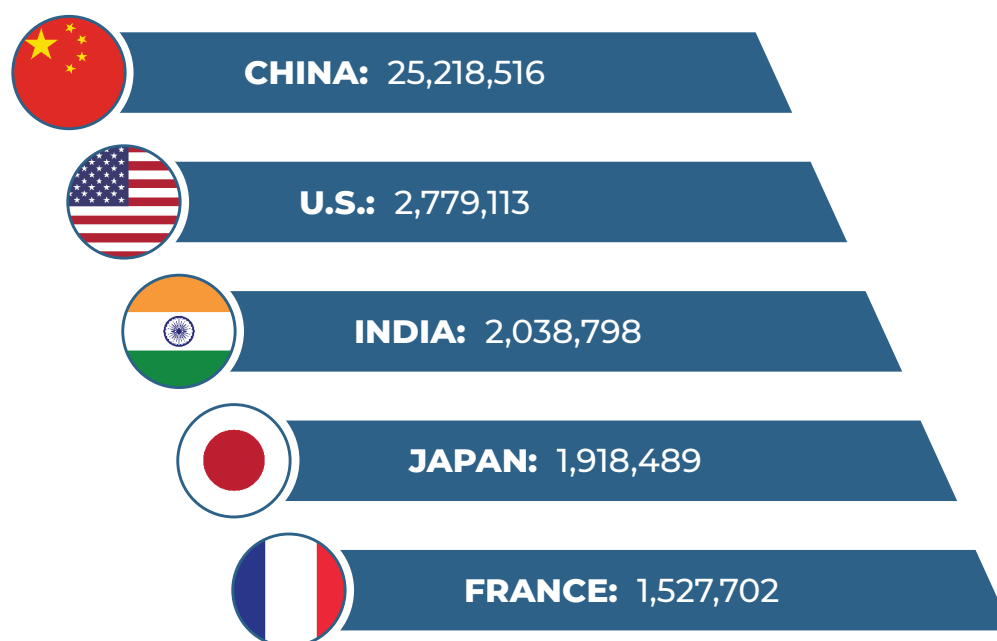


COUNTRY	RANKING	POINTS (TOTAL)	TREATIES	COVERAGE	PROCEDURE	TRADEMARK APPLICATIONS
Benin	105	0.43	0.33	0.83	0.56	0
Lesotho	105	0.43	0.33	0.83	0.56	0
Yemen	106	0.4238	0.17	0.83	0.69	0.0054
Philippines	107	0.4185	0.17	0.83	0.56	0.114
Venezuela	108	0.417	0.17	0.83	0.67	0
Ecuador	109	0.4095	0.17	1	0.44	0.0282
Rwanda	110	0.4053	0.17	1	0.44	0.0112
Lao	111	0.4025	0.17	1	0.44	0
D.R of Congo	111	0.4025	0.17	1	0.44	0
Cote d'Ivoire	112	0.4	0.33	0.83	0.44	0
Senegal	112	0.4	0.33	0.83	0.44	0
Nigeria	113	0.3972	0.17	0.83	0.56	0.0291
Lebanon	114	0.39	0.17	0.83	0.56	0
Ethiopia	115	0.375	0	0.83	0.67	0
Burundi	115	0.375	0.17	1	0.33	0
San Marino	116	0.3725	0.33	0.83	0.33	0
Qatar	117	0.367	0.17	0.83	0.44	0.02808
Cameroon	118	0.36	0.17	0.83	0.44	0
Chad	118	0.36	0.17	0.83	0.44	0
Mali	118	0.36	0.17	0.83	0.44	0
Angola	119	0.3342	0.17	0.83	0.33	0.0068
Nepal	120	0.3325	0.17	0.83	0.33	0
Mauritania	121	0.32	0.17	0.67	0.44	0
Togo	122	0.2625	0.33	0.5	0.22	0



**Figure 1. ITI Structure.**

The ITI is built on 4 clusters: Coverage, Membership in Treaties, Restrictions and Trademark Applications. The overall grading scale of the ITI is [0-1], where 1 is the highest and 0 is the lowest value. The same logic is applied to its components.



**Figure 2. The Five Countries with the Most Trademarks in Force (Wipo 2019).**

## 4. THE INTERNATIONAL PATENT INDEX 2021

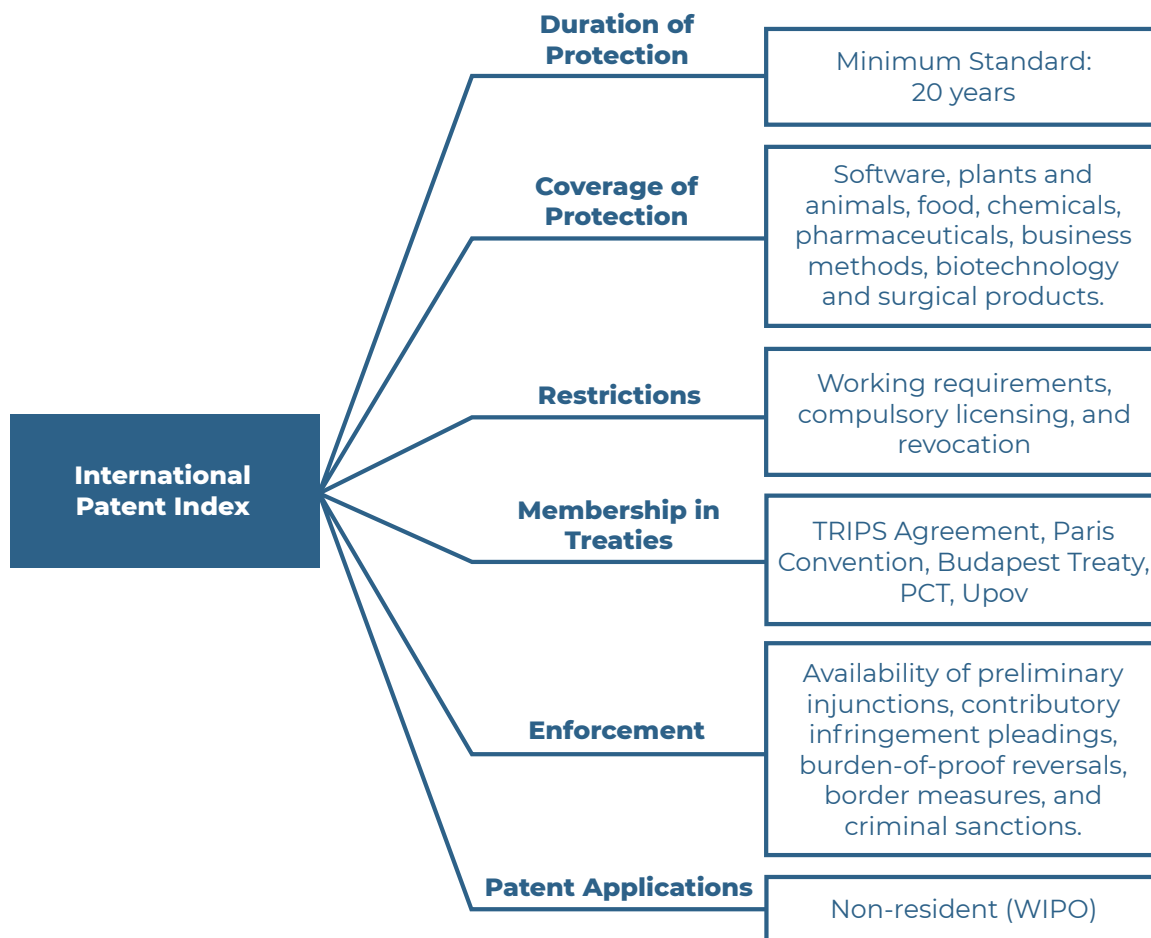
COUNTRY	RANKING	POINTS (TOTAL)	DURATION	ENFORCEMENT	LOSS OF RIGHTS	TREATIES	COVERAGE	PATENT APPLICATIONS
United States	1	5.88	1	1	1	1	0.88	1
Canada	2	4.88	1	1	1	1	0.88	0.00002
Ireland	3	4.6701	1	1	0.67	1	1	0.0001
Chile	4	4.6383	1	1	1	1	0.63	0.0083
Norway	5	4.4217	1	1	0.67	1	0.75	0.00173
Australia	6	4.4106	1	1	0.33	1	1	0.08063
Germany	7	4.3918	1	1	0.33	1	1	0.06184
China	8	4.347	1	1	0	1	0.88	0.467
Austria	9	4.3306	1	1	0.33	1	1	0.00061
Spain	10	4.3304	1	1	0.33	1	1	0.00047
Czech Rep.	11	4.3301	1	1	0.33	1	1	0.00014
Finland	12	4.33	1	1	0.33	1	1	0
Singapore	13	4.2489	1	1	0	1	0.88	0.03689
Denmark	14	4.2106	1	1	0.33	1	0.88	0.00067
Japan	15	4.1861	1	1	0	1	1	0.18611
Mexico	16	4.1851	1	0.67	0.33	1	0.75	0.04351
Korea Rep.	17	4.1408	1	1	0	1	1	0.14084
United Kingdom	18	4.0937	1	1	0	1	0.88	0.02137
South Africa	19	4.0687	1	0.67	0.33	1	0.88	0.01887
Italy	20	4.0026	1	1	0	1	1	0.00266
Netherlands	21	4.0013	1	1	0	1	1	0.00133
Panama	22	4.0009	1	0.67	0.33	1	1	0.00097
Belgium	23	4.0007	1	1	0	1	1	0.00076
Hungary	24	4.0006	1	1	0	1	1	0.00006
Israel	25	3.9789	1	1	0.33	1	0.63	0.01893
Russia	26	3.9161	1	0.67	0.33	1	0.88	0.03619
Luxembourg	27	3.901	1	1	0.67	0.6	0.63	0.00106
New Zealand	28	3.8969	1	1	0	1	0.88	0.01691
Lithuania	29	3.8899	1	0.67	0.33	1	0.88	0.00009
Sweden	30	3.882	1	1	0	1	0.88	0.00225

COUNTRY	RANKING	POINTS (TOTAL)	DURATION	ENFORCEMENT	LOSS OF RIGHTS	TREATIES	COVERAGE	PATENT APPLICATIONS
Switzerland	31	3.881	1	1	0	1	0.88	0.00103
Greece	32	3.8807	1	1	0.33	0.8	0.75	0.0007
Turkey	33	3.8806	1	0.67	0.33	1	0.88	0.00064
El Salva	34	3.7704	1	0.67	0.67	0.8	0.63	0.00043
Morocco	35	3.7575	1	0.67	0.33	1	0.75	0.00752
Poland	36	3.7503	1	0.67	0.33	1	0.75	0.00033
Portugal	36	3.7503	1	1	0	1	0.75	0.0003
Bulgaria	37	3.7502	1	0.67	0.33	1	0.75	0.00002
Romania	38	3.7501	1	0.67	0.33	1	0.75	0.00017
Taiwan	39	3.75	1	1	0.67	0.2	0.88	0
Malaysia	40	3.7292	1	1	0.33	0.6	0.78	0.01926
France	41	3.6652	1	0.33	0.33	1	1	0.00525
Peru	42	3.633	1	0.67	0.33	1	0.63	0.00333
Philippinnes	43	3.5615	1	1	0	0.8	0.75	0.01153
Ecuador	44	3.5512	1	1	0	0.8	0.75	0.00121
Jordan	45	3.5508	1	0.67	0.33	1	0.5	0.00086
Slovakia	45	3.5508	1	0.67	0	1	0.88	0.00008
Iceland	46	3.5504	1	0.67	0	1	0.88	0.00004
Brazil	47	3.4832	1	1	0	0.8	0.63	0.05926
Cyprus	48	3.48	1	0.33	0.67	0.6	0.88	0.00000029
Hong Kong	48	3.48	1	1	0	0.6	0.88	0
Kenya	49	3.47	1	0.67	0	0.8	1	0.00012
Vietnam	50	3.4502	1	0.67	0.33	0.8	0.63	0.02021
Argentina	51	3.4396	1	1	0	0.8	0.63	0.00969
Guatemala	52	3.4306	1	1	0	0.8	0.63	0.00068
India	53	3.43	1	1	0	0.8	0.63	0.1016
Ukraine	54	3.4252	1	0.67	0	1	0.75	0.00521
Trinidad and Tobago	55	3.4203	1	0.67	0	1	0.75	0.00033
Nicaragua	56	3.42	1	0.67	0	1	0.75	0
Ghana	57	3.35	1	0.67	0.33	0.6	0.75	0
Colombia	58	3.3051	1	0.67	0	1	0.63	0.0051
Costa Rica	59	3.2914	1	0.33	0.33	1	0.63	0.0014
Thailand	60	3.2518	1	1	0	0.6	0.63	0.02185
Sri Lanka	61	3.2307	1	0	1	0.6	0.63	0.00075
Egypt	62	3.2234	1	0.67	0	0.8	0.75	0.00343

COUNTRY	RANKING	POINTS (TOTAL)	DURATION	ENFORCEMENT	LOSS OF RIGHTS	TREATIES	COVERAGE	PATENT APPLICATIONS
Dominican Republic	63	3.2106	1	0.33	0	1	0.88	0.00065
Malta	64	3.21	1	1	0.33	0.6	0.88	0.00002
Tunisia	65	3.1708	1	0.67	0	1	0.5	0.0008
Mauritania	66	3.1	1	0.67	0.33	0.6	0.5	0
Jamaica	67	3.0301	1	0.33	0.67	0.4	0.63	0.00015
Honduras	68	3.0205	1	0.67	0	0.6	0.75	0.00055
Botswana	69	3.02	1	0.67	0	0.6	0.75	0
Paraguay	70	3.015	1	0.665	0	0.6	0.75	0
Mozambique	71	3.0107	1	0.33	0.33	0.6	0.75	0.00007
Tanzania	72	2.97	1	0.67	0	0.8	0.5	0
Haiti	73	2.9	1	0	1	0.4	0.5	0
Sierra Leone	73	2.9	1	0	0.67	0.6	0.63	0
Uruguay	73	2.9	1	0.67	0	0.6	0.63	0
Cote d'Ivoire	74	2.89	1	0.33	0.33	0.6	0.63	0
Cameroon	74	2.89	1	0.33	0.33	0.6	0.63	0
Indonesia	75	2.77	1	0.67	0	0.6	0.5	0.02493
Papua N.Guinea	75	2.77	1	0.67	0	0.6	0.5	0
Uganda	75	2.77	1	0.67	0	0.6	0.5	0
Saudi Arabia	76	2.7673	1	0.33	0	0.8	0.63	0.00732
Burkina Faso	77	2.76	1	0.33	0.33	0.6	0.5	0
Benin	77	2.76	1	0.33	0.33	0.6	0.5	0
Rwanda	78	2.68	1	0.33	0	0.6	0.75	0
Grenada	79	2.59	0.7	0.33	0.33	0.6	0.63	0
Mauritius	80	2.57	1	0	0.67	0.4	0.5	0.00006
Congo Rep.	81	2.56	1	0.33	0	0.6	0.63	0
Gabon	81	2.56	1	0.33	0	0.6	0.63	0
Nigeria	81	2.56	1	0.33	0	0.6	0.63	0
Zimbabwe	81	2.56	1	0.33	0	0.6	0.63	0
Bolivia	82	2.52	1	0.67	0	0.6	0.25	0
Malawi	83	2.45	0.8	0.67	0	0.6	0.38	0
Venezuela	83	2.45	1	0.67	0	0.4	0.38	0
Algeria	84	2.4415	1	0.33	0.33	0.4	0.38	0.00156

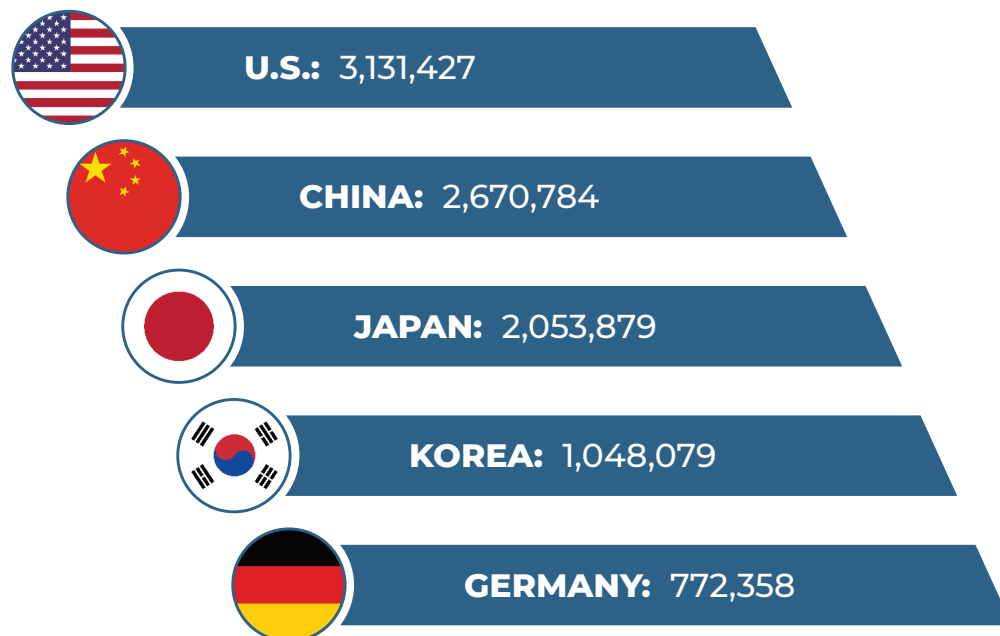
COUNTRY	RANKING	POINTS (TOTAL)	DURATION	ENFORCEMENT	LOSS OF RIGHTS	TREATIES	COVERAGE	PATENT APPLICATIONS
Central African Republic	85	2.43	1	0.33	0	0.6	0.5	0
Chad	85	2.43	1	0.33	0	0.6	0.5	0
Mali	85	2.43	1	0.33	0	0.6	0.5	0
Eswatini	85	2.43	1	0	0.33	0.6	0.5	0
Niger	85	2.43	1	0.33	0	0.6	0.5	0
Senegal	85	2.43	1	0.33	0	0.6	0.5	0
Togo	85	2.43	1	0.33	0	0.6	0.5	0
Zambia	85	2.43	1	0.33	0	0.6	0.5	0.00006
Iraq	86	2.37	1	0.67	0	0.2	0.5	0
D.R of Congo	87	2.36	1	0.33	0	0.4	0.63	0
Sudan	88	2.31	1	0.33	0.33	0.4	0.25	0.00002
Iran	89	2.2317	1	0.33	0	0.4	0.5	0.00171
Pakistan	90	2.2316	1	0.33	0	0.4	0.5	0.00166
Fiji	91	2.2308	0.7	0	1	0.2	0.3308	0
Burundi	92	2.23	1	0.33	0	0.4	0.5	0
Liberia	92	2.23	1	0.33	0	0.4	0.5	0
Madagascar	93	2.18	0.75	0	0.33	0.6	0.5	0.00008
Nepal	94	2.13	0.35	0	1	0.4	0.38	0
Syrian Arab Republic	95	2.06	0.75	0.33	0.33	0.4	0.25	0.00009
Guyana	96	1.78	0.8	0.33	0	0.4	0.25	0
Angola	97	1.6	0.75	0	0	0.6	0.25	0.00032
Bangladesh	98	1.581	0.8	0	0	0.4	0.38	0.00102
Ethiopia	99	1.58	1	0	0.33	0	0.25	0
Somalia	100	1.38	1	0	0	0	0.38	0
Myanmar	101	1.32	1	0	0	0.2	0.12	0





**Figure 3. IPI Structure.**

The IPI is built in six clusters: Duration of protection, Coverage, Restrictions, Membership in Treaties, Enforcement and Patent applications. The overall grading scale of the IPI is [0-1], where 1 is the highest and 0 is the lowest value.



**Figure 4. The Five Countries with the Most Patents in Force (Wipo 2019).**

## 5. RESULTS

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The International Trademark Index (ITI) and the International Patent Index (IPI) 2021 rank 139 and 122 countries respectively. The selection of countries was determined only by the availability of sufficient data.

The United States leads the ITI 2021 with a score of 0.8794 and the IPI 2021 with a score of 5.88. Canada ranks 2nd in the IPI (4.88), while China ranks 2nd in the ITI (0.8625). At the other end, Mauritania (0.32) and Togo (0.2625) are found in the bottom rankings in the ITI. Somalia (1.38) and Myanmar (1.32) have the lowest scores in the IPI. Moreover, according to the data, increased levels of growth lead to greater levels of IP protection. Weak protection of IPRs poses a significant barrier to international technology licensing and reduces direct investment.

Based on our findings, the United States has effectively secured the protection of trademarks and continues to provide the tools necessary to prevent IP infringement. Like the U.S., Canada's score also demonstrates a committed and successful effort to safeguard and enforce patents. Particularly, IP laws in these respective countries illustrate that assets of right-holders are fully protected even when sharing valuable platform technology with other companies.

These laws serve as a critical example to balance the interests of rewarding the owner's enterprise with the interests of the larger community to benefit from innovation. Extensive surveys by the World Economic Forum (WEF) show the correlation between a country's intellectual property protection and its economic competitiveness.

The IP system offers a wide range of tools for countries at different stages of economic development and has proven itself to be essential. Patents and trademarks are important tools in allowing innovators to select skilled partners to manufacture high-quality products and to help guarantee wide access to current and future goods. As a result, the IP system is crucial in promoting trust and knowledge sharing between individuals and industries.

## ABOUT THE AUTHORS

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**Walter Park** is a professor of economics and currently the chair of the Department at American University and an affiliate faculty at the Washington College of Law, AU, Program on Information Justice and Intellectual Property. He is also a special sworn employee at the U.S. Bureau of Economic Analysis, Department of Commerce, and serves on the editorial boards of the EFIL Journal of Economic Research, the International Journal of IP Management, and the advisory editorial board of Research Policy. His area of research focuses on the impacts of intellectual property rights on innovation, licensing, and foreign direct investment, as well as on international R&D spillovers, open innovation, and mergers. He has published widely and his works are widely cited. He has consulted for the Center for Global Development, European Patent Office, Industry Canada, OECD, and the World Bank, among others. He holds a B.A. degree in economics and statistics from the University of Toronto, M.Phil in economics from Oxford University, and Ph.D in economics from Yale University.

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