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INTERNATIONAL PROPERTY RIGHTS INDEX 2021

THE STATUS OF INTELLECTUAL PROPERTY RIGHTS IN BRAZIL

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1

INTRODUCTION

Brazil was one of the pioneer countries in intellectual property legislation, as clarified by Campos & Denig (2011). First was the law on inventions and patents enacted in 1830, then the industrial trademark law of 1875. However, throughout its history, intellectual property rights have varied in importance.

For decades, throughout the national-development period (1930-1990), intellectual property rights were left out. In the formerly predominant conception, physical production and physical capital stock were overvalued in relation to intangible assets (VASCONCELOS & SILVA, 2019). However, from the late 1980s onwards, it became clear that the dominant paradigm turned to the knowledge society and the valuation of intangible assets (CAMPOS & DENIG, 2011). The path for the country's development could not abdicate intellectual property rights, trade opening and integration, institutional modernization, improvement of the business environment, and economic freedom. The need for a modern research, development and innovation (RD&I) system demands the defense of robust property rights. The important institutional landmarks of this period are the 1988 Constitution and Federal Law 9,279 of 1996.

However, despite legal regulations, the country's performance in terms of intellectual property rights leaves something to be desired. In practice, the environment is still insufficient to rapidly promote RD&I. As Matias-Pereira (2011) states, the necessary path for the country's technological development is to create an institutional environment that encourages investments in RD&I. Therefore, says the author, an effective effort is needed to improve the management of intellectual property protection policies.

In recognition of the importance of intangible assets and the knowledge economy, the objectives of this white paper are to present the current situation of intellectual property rights in Brazil, compare the country's performance measured by international indicators, discuss the challenges that exist in the national system of intellectual property rights, and recommend good practices that need to be adopted.

Therefore, we hope to contribute to the debate on economic development, innovation promotion, and the business environment in Brazil.

2

INTELLECTUAL PROPERTY RIGHTS IN BRAZIL

Property rights cover the protection of industrial property rights (inventions and industrial design patents), copyrights (reproduction rights), and trademarks (trademarks). Intellectual property rights in Brazil are primarily guaranteed by the Federal Constitution of 1988, in its fifth article, items XXVII to XXIX, dealing with copyright, industrial creations, trademarks, and copyrights.

Federal Law 9,279 of 1996 regulates the rights and obligations related to industrial property and deals with patents for inventions, industrial design registration, trademark registration, and repression of piracy and counterfeiting. Next, as consolidated in Guarnica (2007), we have the following legislation regarding intellectual property:

a. Law 9,456/1997 institutes the Cultivar Protection Law;

b. Law 9,609/1998 provides for the protection and commercialization of intellectual property;

c. Law 9,610/1998 amends, updates, and consolidates copyright legislation;

d. Law 10,196/2001 alters and adds provisions that regulate industrial property rights;

e. Law 10,603/2002 provides for protection of undisclosed information for the approval and sale of pharmaceutical products.

In other words, Brazil has a legal framework and institutional support for intellectual property. However, it is not enough to have laws. They must be enforced. Furthermore, it is necessary, on the one hand, that rights and duties are fully known by the companies and make use of them; on the other hand, intellectual property protection system must operate in an easy and agile manner.

From the point of view of establishing a National Innovation System seeking to stimulate the relationship between government, universities, or research centers with companies, Law 10,973 of 2004 was drafted. It regulates measures to encourage scientific and technological research within the scope of companies. Later, in 2016, this law was amended by the "Science, Technology and Innovation Framework" (Law 13,243/2016), as reported by Verde and Miranda (2019).

To encourage technological innovation, there is also the "Technological Innovation Law", which guarantees tax incentives for export platforms of information technology services, acquisition of capital goods for exporting companies and digital inclusion programs (Law 11,196/ 2005), in addition to "Lei do Bem" (a.k.a. 'Law of Good'), which grants tax incentives to legal entities that carry out research and development of technological innovation (Decree 5,798/2006).

Matias-Pereira (2011) reports that, despite legal framework and tax incentives, a portion of Brazilian entrepreneurs and national institu-

tions are not aware of the importance of intellectual property in the context of international trade and the acquisition of new technologies. National companies that are aware complain about the effective lack of adequate protection for trademarks, patents, and industrial designs. In addition, they report bureaucracy and delays in registering or defending trademarks and registering patents.

Verde and Miranda (2019) analyze Brazilian statistics of efficiency in innovation between 2012 and 2017. The authors find that the country is inefficient in innovation and, during the period analyzed, there was still a drop of 0.3 (which is equivalent to the loss of more than one-third of the efficiency). That is, the National Innovation System is ineffective. Buainain and Souza (2018) find that most patent applications are made by multinational companies. The share of applications referring to residents in the country has a predominance of research institutions (universities). Few national companies have endogenous research and development capacity.

Regarding the legal framework (which includes intellectual property rights), Verde and Miranda (2019, p. 128) state that there is a "detachment between the theoretical advance" of the regulatory framework and the "worsening in practice" of innovation. The authors attribute, in addition to the unfavorable economic situation, the conflict between laws of the Union, States, and Municipalities, the "reaction time and adequacy of the public sector" including the National Institute of Industrial Property (INPI), and the "lack of knowledge of legislation and instruments of cooperation by the private sector". Therefore, the result diagnosed by Buainain and Souza (2018) is that the protection of intellectual property in Brazil is underutilized.

From the diagnosis above, the Brazilian Government established a workgroup about intellectual property in 2019. Recently, on June 09th 2021, the Action Plan 2021-2023 of the National Intellectual Property Strategy has been released. The strategy was carried out by members from 16 ministries and partner organizations led by the Special Secretariat for Productivity, Employment and Competitiveness of the Ministry of Economy. It is one of the actions that have been settled for Brazil to become an OECD member.

The workgroup prioritized 49 of the 210 actions foreseen in the Strategy. Each action has a responsible group and a series of deliveries and deadlines for meeting the strategy's biennial goals and global targets starting from August 2021. A web page[1] has been created to publicize the National Intellectual Property Strategy, the Action Plan 2021-2023, and its targets and goals. It is possible to monitor the execution and achievement of goals. The web page also brings together legislation on intellectual property and relevant news on the subject.

On the other hand, because of the COVID-19 pandemic, there was significant pressure on Congress and Government for having "measures to ensure" drugs and vaccines. On September 2nd, bill 12/2021 discussed "Compulsory Licensing of Patents" in "cases of declaration of national or international emergency or of public interest or recognition of a state of public calamity nationwide". This bill is particularly concerning because what is named "public interest" is quite generic and not specified. It can open a door for eventual measures against intellectual property rights on medicines and drugs. But, beyond that, as Bento (2021) calls to our attention, "the bill approved in Brazil not only authorizes patent breaking, but also requires the transfer of all related materials, even biological inputs, used to produce the product that is the object of the patent breaking". Presidential veto has partially avoided the main problems related to the radical "out of WTO standards" technological transfer and intellectual property rights violation, but Congress can still overthrow the veto.

1. See https://www.gov.br/pt-br/propriedade-intelectual

3

BRAZIL'S PERFORMANCE IN INTERNATIONAL INDICATORS

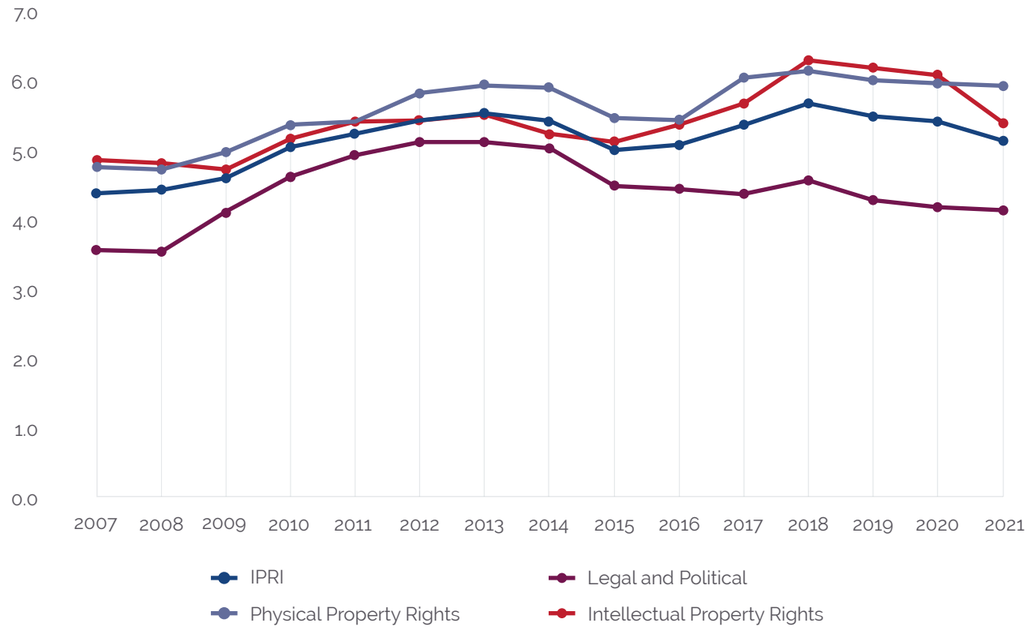
Brazil had previously scored better in the ranking of the International Property Rights Index (IPRI), reaching 42nd position. It currently occupies 74th position. Between 2007 and 2021, as shown in Figure 1, there was a trend of worsening of performance. The country was unable to overcome a mediocre performance that was incompatible with the size of its economy.

FIGURE 1. BRAZIL: IPRI RANKING POSITION OVER TIME (2007-2021)

Source: Property Rights Alliance (2021 International Property Rights Index)

The country's weak performance is due to the rupture of the trajectory of improvement in the scores of the IPRI components (see Figure 2). Legal and Political has been in decline since 2013. Intellectual Property has fallen in the past three years, interrupting three years of continuous improvement. Likewise, Physical Property Rights had a performance decline in the last three years after reaching the best score in the historical series in 2018.

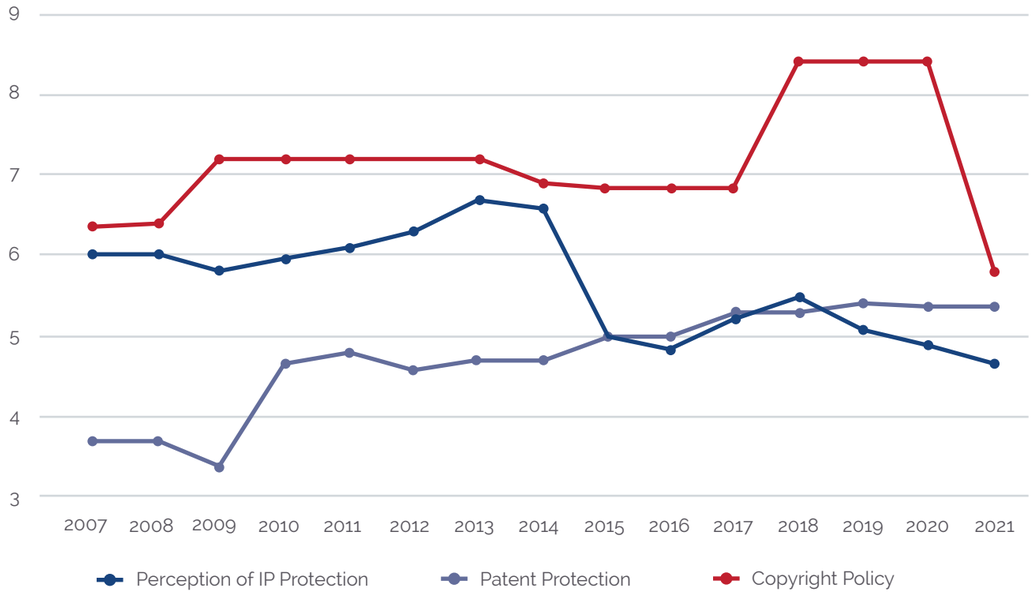
FIGURE 2. BRAZIL: IPRI AND ITS SUBINDICIES - SCORE INDEX



Source: Property Rights Alliance (2021 International Property Rights Index)

The evolution of the Intellectual Property subindex can be understood by Figure 3, which presents its components. While the patent protection rating has risen over the past three years before 2021, it dropped sharply last year, particularly because of the pandemic and its consequent policies (see Section 4). Since 2015, the copyright policy rating has continued to rise slightly, and the intellectual property protection rating has continued to fall. Regarding this last component, its negative performance could not be compensated by others. In addition, as will be discussed further, the performance of the INPI, which reduced backlog and positively influenced patent protection, will not prevent the fall in the coming years regarding the Supreme Court's decision on Article 40 of Federal Law 9,279/1996 and the minimum term of patent protection in Brazil.

FIGURE 3. BRAZIL: INTELLECTUAL PROPERTY RIGHTS SUBINDEX - COMPONENTS



Source: Property Rights Alliance (2021 International Property Rights Index)

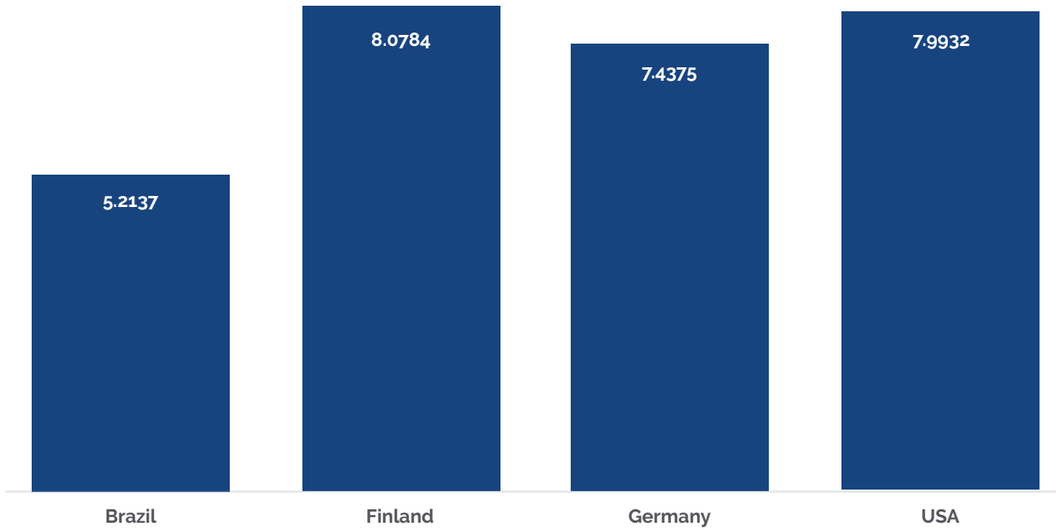
4

BRAZIL COMPARED TO GERMANY, USA, AND FINLAND

In the 2021 IPRI, Finland, Germany, and the USA occupy positions 4, 17 and 6 respectively. They are good parameters for us to carry out a benchmark for Brazil, which occupies the 74th position, as previously reported.

Brazil's underperformance is not just in relative terms, but in absolute terms. Figure 4 shows that Brazil's score is much lower than the scores of the countries selected for comparison; it is around 5.2 while the scores of the other countries are between 7.4 and 8.1.

FIGURE 4. IPRI: 2021 SCORE FROM SELECTED COUNTRIES



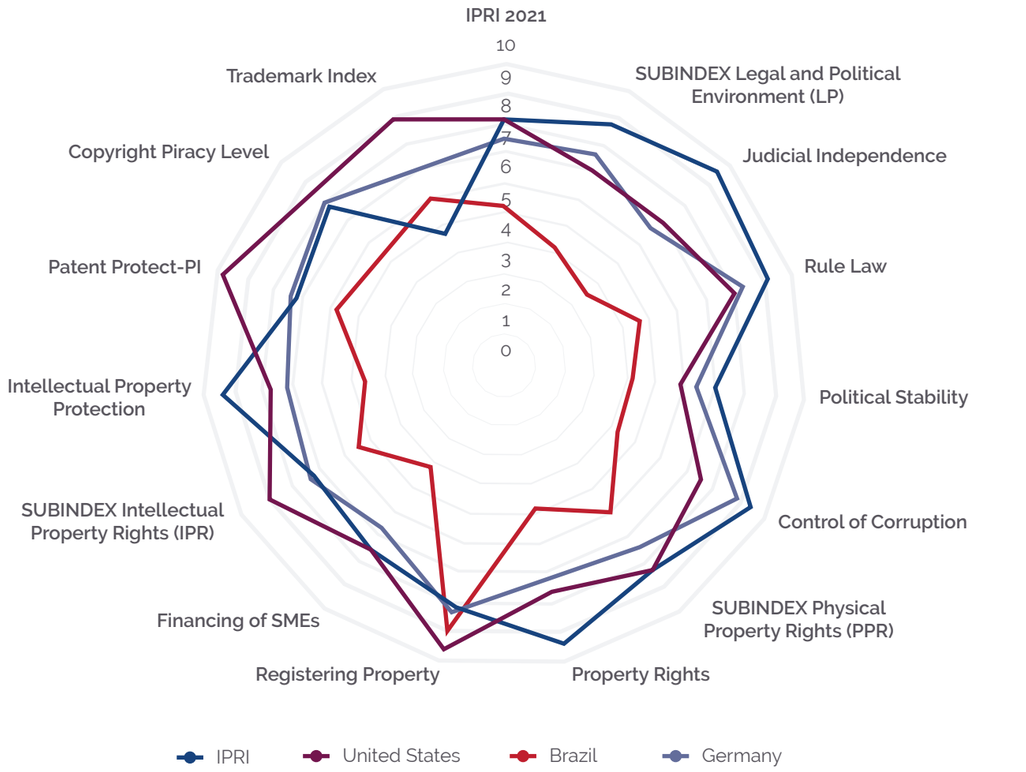
Source: Property Rights Alliance (2021 International Property Rights Index)

The reason for the distance of the score and position of Brazil in relation to Finland, Germany and the USA is shown in Figure 5. In a systematic way, Brazil is lower on all criteria except Trademark Index with respect to Finland, and Registering Property with respect to Finland and Germany. In fact, those are Brazil's best performance items.

Brazil's worst performeance refers to the Legal and Political sub-index. The question of the independence of the judiciary, control of corruption, and the rule of law are far-behind.

In relation to the Intellectual Property Rights sub-index, Brazil's performance is fully inferior to selected countries. The difference is smaller in the patent protection component. We do not believe this will remain for years to come, as in 2021 an important article of the 1996 Patent Act was repealed in the Supreme Court (explained later).

FIGURE 5. PRI 2021: PERFORMANCE COMPARISON BETWEEN SELECTED COUNTRIES



Source: Property Rights Alliance (2021 International Property Rights Index)

5

CURRENT ISSUES

Despite all the difficulties, there is a lot of effort being made in different productive segments. Innovation and productivity gains are the hallmarks of the expansion of agribusiness over the last 20 years and have ensured Brazil's prominent position in the world's food supply. Scientific research and the development of biotechnology, with the prominence of Embrapa (Brazilian Agricultural Research Corporation), are responsible for ensuring the growth of production much higher than that of the area used by agricultural activities. That is why Buainain and Souza (2018, p. 17) state that agriculture is driven by innovation and intellectual property, with the need to protect cultivars.

Regarding telecommunications, mobile Internet access with 4G technology increased by one hundred thirty million new customers between 2013 and 2018. Broadband access increased by nine million new customers, and the country reached an average of just over one cell phone line per inhabitant. The Brazilian telecommunications market is simultaneously dominated by government regulation and private companies. For example, the mobile sector is dominated by foreign capital, with over 98% of the market share belonging to just four companies and related television services regularly being subject to regulations that make the inflow of foreign capital virtually impossible. Continued government interference and lack of reform have discouraged competition in the domestic market, as evidenced by the trend in the total number of patent applications filed with INPI annually. In 2000, there were 998 telecommunications patent applications; in 2017 there were only 177. It is combined with an environment where, despite strong patent and trademark protection, bureaucracy means that a patent application is approved, on average, after approximately 5.8 years (years ago this deadline reached 13 years). This has made thousands of ideas and inventions subject to theft in a market that has historically been fighting for more transparent operating practices.

For medicines and drugs the timeline for approval is even longer. Table 1 gives us an example of estimated time to approve new pharmaceutical medicines.

TABLE 1. PATENT APPLICATION FOR PHARMACEUTICAL MEDICINES IN BRAZIL: EXAMPLES OF DELAYING APPROVAL

MEDICINE	PATENT NUMBER	APPLICATION	APPROVAL	TIME ELAPSED
GOLIMUMABE	PI0113110	08/07/2001	03/20/2018	16 YEARS
DACLATASVIR	PI0716483	09/08/2007	10/09/2018	11 YEARS
DASATINIBE	PI0009721	04/12/2000	11/21/2018	18 YEARS
NILOTINIBE	PI0312464	07/04/2003	07/04/2017	14 YEARS
CERTOLIZUMABE PEGOL	PI0106682	06/05/2001	02/18/2019	17 YEARS
DARUNAVIR	PI0311176	05/16/2003	02/18/2019	15 YEARS
SOFOSBUVIR	PI0809654	03/26/2008	02/18/2019	10 YEARS
ADALIMUMABE	PI9707379	02/10/1997	02/23/2010	13 YEARS
ECULIZUMABE	PI9507594	05/01/1995	11/03/2009	14 YEARS

Source: Paranhos, Mercadante & Hasenclever (2020)

The main current issue, however, is the legislation itself. In 2018, a lawsuit of unconstitutionality (a.k.a. ADIN) was filed in the Supreme Court challenging Article 40 of Federal Law 9,279/96. The proponent was the Brazilian Association of Fine Chemical Industry, Biotechnology, and its Specialties (ABIFINA). This was the beginning of a provocation about guaranteeing a minimum patent period of 10 years that would compensate for the delay in approval of applications, but without exceeding the 20-year limit defined by law.

Article 40 stated that the "invention patent will be in force for a period of 20 (twenty) years and the utility model for a period of 15 (fifteen) years from the date of filing." The sole paragraph of the article states that the "effective term shall not be less than 10 (ten) years for the patent of invention and 7 (seven) years for the patent of a utility model, from the date of grant, except for in the event that the INPI is prevented from examining the merits of the request, due to proven judicial pending or for reasons of force majeure."

This last paragraph of Article 40 had its existence justified by the recognized slowness of the difficulty of the INPI to analyze the merits of a request and grant a patent. The average term for granting a patent is currently 5.8 years in Brazil, and in some cases, it may reach 14 or more years, as seen in Table 1.

The Supreme Court did not approve the ADIN from ABIFINA (case dismissed), but it gave rise to another ADIN 5529, proposed by the Federal Public Prosecutor's Office. It questioned the additional patent term due to the INPI's delay in evaluating the applications. In other words, the guarantee of a minimum ten-year patent term should be eliminated. ADIN 5529 won at the Supreme Court.

The law suffered a setback regarding the duration of the patent. The removal of the minimum ten-year validity period in Article 40 — even the former Article 40 did not exceed the 20-year limit — means that patent holders in Brazil now have one of the shortest periods of protection in the world. Nowadays, the time elapsed in granting patents is considered in the 20-year limit. So, if a new drug takes 19 years to be approved, it has only 1 year to have sales authorized under the protection of the granted patent.

Patents encourage long-term innovation. Delays in granting patents or limiting the patent term impose enormous costs on society. The function of patenting an invention that offsets the sunk costs of RD&I activity to stimulate investment. The alleged unconstitutionality of Article 40 of Federal Law 9,279/96 meant that the Supreme Court suddenly changed the legal provision and extinguished the article without an even more expressive improvement in the patent registration and granting system. It makes no sense to untimely eliminate patent protection without reducing the system's backlog to levels compatible with world benchmarks. All the INPI's inefficiency is being transferred to society. Additionally, ADIN 5529 imposed a retroactive decision specifically to pharmaceutical industry resulting in several losses.

The small amount of innovation in Brazil, when compared to the United States, Europe, Japan, and South Korea, for example, was only possible with the current legal regulation, then embodied in Art. 40. Its removal became, in practice, the shortest law of patent and invention in the world, relegating the intellectual property environment to resemble something more like Venezuela than Germany, Finland, or the United States.

The allegation of some analysts that the lawsuit sought to promote competition and competitiveness is not accompanied by a reflection on the need to create an environment of legal security in the country that encourages innovation and, therefore, that institutions such as the INPI function more quickly and efficiently. As the former Finance Minister Pedro Malan stated, "In Brazil, even the past is uncertain."

6

BEST PRACTICES AND RECOMMENDATIONS

Brazil aims to be part of the OECD. One of the sensitive aspects is intellectual property. The best reward system for research, development, and innovation efforts is the guarantee of intellectual property rights. The success of any innovation strategy is not possible without an institutional environment that massively disseminates intellectual property. Best practices from innovative ecosystems are associated with intellectual property strategies as discussed in Germeraad (2015).

The consolidation of a Brazilian National Innovation System involves improving the functioning of the mechanisms that make up the intellectual property system. In this sense, Brazil's performance is mediocre in relation to the size of its economy and importance in the southern hemisphere. The International Patent Index shown in Table 2 shows that Brazil's position is much lower when compared to the US, Germany, and Finland — losing note due to treaties and coverage. It occupies position 47.

TABLE 2. 2021 INTERNATIONAL PATENT INDEX

	BRAZIL	FINLAND	GERMANY	USA
INTERNATIONAL PATENT INDEX RANKING	47	12	7	1
INTERNATIONAL PATENT INDEX	3.4832	4.33	4.3918	5.88
DURATION	1	1	1	1
ENFORCEMENT	1	1	1	1
LOSS OF RIGHTS	0	0.33	0.33	1
TREATIES	0.8	1	1	1
COVERAGE	0.63	1	1	0.88
APPLICATIONS	19932	75	20802	336340

Source: Property Rights Alliance (2021 International Property Rights Index)

Although Brazil has an adequate legal framework, there is still a lot to be done to improve the country's performance in the presented indices. In the case of drugs and pharmaceuticals, the need for prior consent from the health surveillance agency (ANVISA) prevailed for patent grant by the INPI. That is, in this case there were two institutions to evaluate the granting of patents. This condition has changed since September 21, 2021, through the approval of the Business Environment Law which, among other things, eliminated the requirement for prior consent by ANVISA.

Another aspect of pharmaceutical intellectual property and the development of new drugs is the massive need for funds to conduct clinical trials. Studies must be traceable and data scientifically treated, but investments in the construction of treatment and control (placebo) groups must be owned by the company, respecting data privacy. Otherwise the very process of testing drugs and medicines will be compromised.

According to Vasconcellos and Silva (2019), one of the most important things is to guarantee access to the general population the knowledge related to intellectual property, its implications, the duties and rights assured, how to exercise them, etc. All national companies are not even fully aware of its importance. MacDougall (2003) cites best practices for disseminating information about intellectual property on websites, customer service centers, publications, and lectures.

It is interesting to note in Table 3 that Brazil is in the same ranking position when it comes to the International Trademark Index. It continues to occupy the 47th position, much lower than the USA and Germany. Although, in this case, its position is superior to that of Finland. Brazil loses scores in treaties, procedure and, especially, trademark applications.

TABLE 3. 2021 INTERNATIONAL TRADEMARK INDEX

	BRAZIL	FINLAND	GERMANY	USA
INTERNATIONAL TRADEMARK INDEX RANKING	47	91	9	1
INTERNATIONAL TRADEMARK INDEX	0.6011	0.4763	0.7053	0.87945
TREATIES	0.5	0.33	0.83	0.67
COVERAGE	1	1	1	1
PROCEDURE	0.78	0.56	0.89	1
TRADEMARK APPLICATIONS	0.1247	0.0152	0.1012	0.8478

Source: Property Rights Alliance (2021 International Property Rights Index)

Regarding brands, combating piracy also depends on communication and dissemination of knowledge and understanding of the importance of intellectual property. It is not enough just to increase the power to inspect smuggling — illegal trade in brands and products. It is necessary to clarify the meaning in terms of gains, quality, and value for the consumer and for the company because of respect for intellectual property.

However, the best fight against piracy and stimulating the performance of trademark and patent indices is the opening of trade in Brazil. The country is still quite closed to international trade. Tariff reduction makes imported original products cheaper and reduces the incentive to purchase pirated products. A greater number of trade agreements and treaties improve Brazil's position and foster a more competitive business environment.

Despite recent improvements, further progress is needed in modernizing the National Institute of Industrial Property (INPI). Since 2019 the INPI has been undergoing a process of modernization. It is called the "Project to Combat Backlog," which aims to reduce, in a period of two years, the number of patent applications for inventions with required examination and pending decision. This effort reduced the average time from 10.2 years in 2017 to 5.8 years in 2020, but remains very high. In OECD countries such as Mexico and Poland it takes three years; in the EU, Australia, New Zealand, Republic of Korea, and Japan it takes less than two years. For example, A WIPO informs that in 2019 the pending request for examination in Brazil was 2,196 days, while Finland and the United States were 201 and 465 days, respectively. The INPI governance model and management mechanisms still need improvement, as evidenced by Buainain and Souza (2018), and should think of decentralization models of PTO tasks through local offices of technology transfer, if not privatization.

7

CONCLUDING REMARKS

Brazil must improve the competitive environment, especially around innovation, which has positive impacts across society. Not only can companies produce more and introduce new products, services, and production processes, but also reduce the scope for corruption to occur. For example, the International Property Rights Index shows that there is a close relationship (correlation of 0.849) between the presence of institutions that respect property rights and the fight against corruption.

Brazil has a long way to go to improve its business environment. Different from what many interventionist economists claim, the necessary increase in productivity and innovation will not come about through greater State participation, subsidized loans, and the choice of "national champion" companies. The country has tried these policies several times in the past, and they have not resulted in a sustainable growth path. Only by opening trade and improving the business environment — which includes the dissemination of intellectual property — will the country be able to fully insert itself in the list of the biggest and best economies in the world.

There is a positive expectation that the National Intellectual Property Strategy and its action plan manage to be put into practice and spread. The usual precept is that measures remain in the field of intentions and not become concrete actions. The turbulent political scenario in Brazil could cloud the measures to stimulate intellectual property and the country further postpone its modernization and adaptation to OECD standards.

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