



Unlocking
IP-backed
Financing
Series

Country
Perspectives
**Brazil's
Journey**



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Acronyms

ABDI	Brazilian Agency for Industrial Development
ABGF	Brazilian Guarantees and Fund Managements Agency
AI	Artificial intelligence
ANCINE	National Film Agency
ANPROTEC	National Association of Entities Promoting Science and Technology Entrepreneurs
B2B	Business-to-business
BADEPI	INPI IP Database
BIS	Bank for International Settlements
BNDES	National Bank for Economic and Social Development
BNDES FGI	BNDES Investment Guarantee Fund
BNDESPAR	BNDES Participações S.A.
BRICS	Cooperation forum comprising Brazil, Russia, India, China, South Africa and six new member countries
CADE	Administrative Council for Economic Defense
CAPES	Federal Agency for Support and Evaluation of Graduate Education
CIDE	Economic Intervention Contribution
CNPq	National Council for Scientific and Technological Development
CONFAP	National Confederation of State Research Support Foundations
CPC	Accounting Norms Committee
CVM	Securities and Exchange Commission
EMBRAPA	Brazilian Agricultural Research Corporation
EMBRAPII	Brazilian Industrial Research and Innovation Corporation
ENPI	National Intellectual Property Strategy

FAMPE	Micro- and Small Enterprise Guarantee Fund
FAP	Research Support Foundation
FBN	National Library Foundation
FINAME	Special Agency for Industrial Financing
FINEP	Funding Agency for Studies and Projects
FIP	Investment and Participation Fund
FNDCT	National Fund for Scientific and Technological Development
FORTEC	National Forum of Innovation and Technology Transfer Managers
FUNDEB	Basic Education Maintenance and Development and Education Professionals Support Fund
GDP	Gross domestic product
GEDAI	Research Group on Copyright and Industrial Law
GI	Geographical indication
GII	Global Innovation Index
GIPI	Interministerial Intellectual Property Group
ICC	International Chamber of Commerce
ICT	Scientific, technological and innovation institution
IFRS	International Financial Reporting Standards
INPI	National Industrial Property Institute
MCTI	Ministry of Science, Technology and Innovation
MDIC	Ministry of Development, Industry, Trade and Services
MinC	Ministry of Culture
MSME	Micro-, small and medium-sized enterprise
MVP	Minimum viable product
NGO	Non-governmental organization
NIB	New Industry Brazil
NIS	National Innovation System
NIT	Technology Innovation Center
OECD	Organisation for Economic Co-operation and Development
R&D	Research and development
RD&I	Research, development and innovation

SEBRAE	Brazilian Support Service for Micro- and Small Enterprises
SICOOB	Financial Cooperatives System
SME	Small and medium-sized enterprise
STI	Science, technology and innovation
TRL	Technology Readiness Level
UFMG	Federal University of Minas Gerais
UFSC	Santa Maria Federal University
UNICAMP	Campinas State University
VaR	Value at Risk
VPPR	Probable realizable present value
WIPO	World Intellectual Property Organization

Executive summary

Intangible assets are strategic drivers of innovation, productivity and economic growth. According to the Organization for Economic Co-operation and Development (OECD), intangible assets are non-physical assets capable of enabling the commercialization of knowledge and are “widely recognized as a major source of future growth”.¹ Investments in research and development (R&D) and intellectual property (IP), such as patents, designs, trademarks, copyright, software and know-how, and assets such as databases, economic skills, reputation and human capital are the main types of intangible asset. In 2020, data released on companies listed on the Standard & Poor’s 500 stock market index showed that 90 per cent of their assets were intangible and valued at US\$21 trillion. In comparison, in 1975, the total was 17 per cent, valued at US\$122 billion.² Data published by the World Intellectual Property Organization (WIPO) and the Luiss Business School reveal that investment in intangible assets grew at three times the rate of that in tangible assets between 2008 and 2023, proving resilient despite economic uncertainty and tightening monetary conditions.³

Given the importance of intangible assets to companies and the mismatch between their relevance and available options for innovation financing, the aim of this report is to provide an overview of the topic in Brazil, highlighting the maturity of intangible assets, particularly IP assets, and their potential use for financing, and to show that the attendant benefits accrue to the economy and society of Brazil.

An initial overview covers the country’s innovation ecosystem, its financial system, and legal and regulatory aspects relating to IP and innovation, and IP protection statistics over the past decade.

The discussion then focuses on Brazilian experiences and initiatives in the public and private sectors designed to foster the development of an IP finance ecosystem. That includes an examination of government and financial support mechanisms for micro-, small and medium-sized enterprises (MSMEs), startups, and scientific, technological and innovation institutions (ICTs, *Instituições Científicas, Tecnológicas e de Inovação*), highlighting the types of IP-related support available, including tax subsidies, government-subsidized preferential interest rates and other forms of technical assistance that could facilitate the introduction of IP finance. Of key interest to large companies are mergers and acquisitions (M&A), the use of intangible assets as collateral and the cross-referencing of data on IP rights ownership in judicial credit recovery and active debt processes.

To gather insights from stakeholders in the Brazilian innovation system and the national financial system, 14 interviews were conducted with representatives of the following organizations: the National Bank for Economic and Social Development (BNDES), Brazilian Agency for Industrial Development (ABDI), Brazilian Guarantees Agency (ABGF), National Council for Scientific and Technological Development (CNPq), National Forum of Innovation and Technology Transfer Managers (FORTEC), National Industrial Property Institute (INPI), Ministry of Science, Technology and Innovation (MCTI), Ministry of Defense, Brazilian Support Service for Micro- and Small Enterprises

(SEBRAE), Ministry of Culture (MinC), National Film Agency (ANCINE) and Research Group on Copyright and Industrial Law (GEDAI), as well as a private bank⁴ and private investment fund.⁵

The report outlines the main challenges associated with using IP assets as collateral for financing, focusing on two critical areas: IP valuation and IP awareness. The discussion covers key advances in those areas and the obstacles that remain. Finally, proposals are presented for projects and partnerships with other government agencies and the private sector to advance IP finance in Brazil.

Brazil's journey

Introduction

Brazil leads innovation in Latin America and the Caribbean region, according to the Global Innovation Index (GII)⁶ of 2024. The country ranks 50th globally, having climbed 20 places since 2015. The rise marks one of the greatest advances worldwide since 2019. Among original BRICS members, Brazil is ahead of the Russian Federation (ranked 59th in the GII) and South Africa (ranked 69th).

Among the GII indicators, Brazil did best in the “knowledge absorption” category, which measures payments for intellectual property (IP) rights, the “knowledge and technology products” category, which highlights inventions and patents generated in the country’s innovation ecosystem, and the “impact of knowledge” category, which highlights “unicorns”. All of which reflects the maturity of the country’s national IP system.⁷

The IP system in Brazil brings together several public institutions that directly administer the different IP rights, which are linked to various government agencies.⁸ The National Industrial Property Institute (INPI), under the Ministry of Development, Industry, Commerce and Services (MDIC), registers patents, trademarks, industrial designs, geographical indications, software, integrated circuit topographies and technology transfer contracts. The Ministry of Culture (MinC), through the Secretariat for Copyright and Intellectual Rights, the National Film Agency (ANCINE) and the National Library Foundation (FBN), oversees copyright protection. Several other ministries manage specialized aspects of IP: the Ministry of Agriculture, Livestock and Supply (National Service for the Protection of Plant Varieties); the Ministry of Environment and Climate Change (Genetic Heritage Management Council); the Ministry of Justice and Public Security (National Council for Combating Piracy and IP Crime); and the Ministry of Education (through the Federal University of Rio de Janeiro’s School of Fine Arts, which registers visual art works, and School of Music, which registers sheet music).

The innovation ecosystem in Brazil is based on a partnership between companies, academic institutions and the Government – a structure known as the triple helix model. The Government stimulates innovation through public financing institutions, laws and public policies, all of which supports R&D activities and encourages public-private cooperation through financial backing and tax incentives.

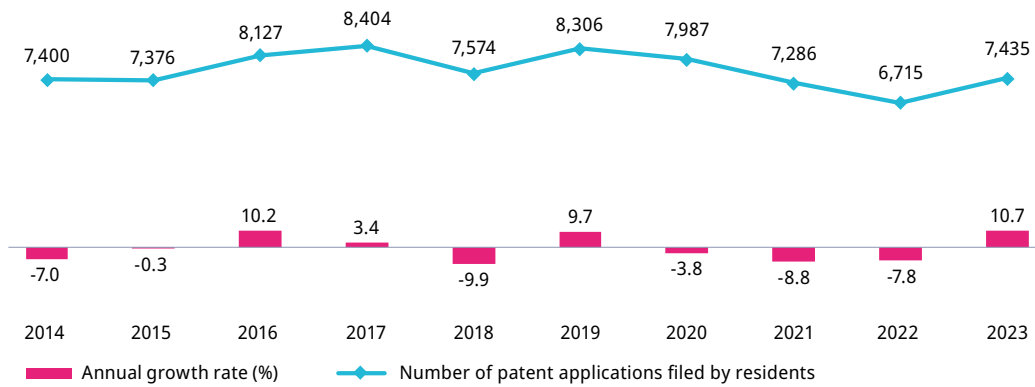
Brazil boasts a robust university and research institution network, known collectively as scientific, technological and innovation institutions (ICTs, *instituições científicas, tecnológicas e de inovação*), which is primarily made up of public institutions and promotes technology transfer. Technology parks help to create spaces in which academic expertise meets start-up innovations through incubators and innovation centers.

Thanks to the integration of the triple helix model and the enhancement of the National Innovation System, Brazil has made great strides in e-commerce, digital services, renewable energy and green technologies.

Statistics on IP in Brazil

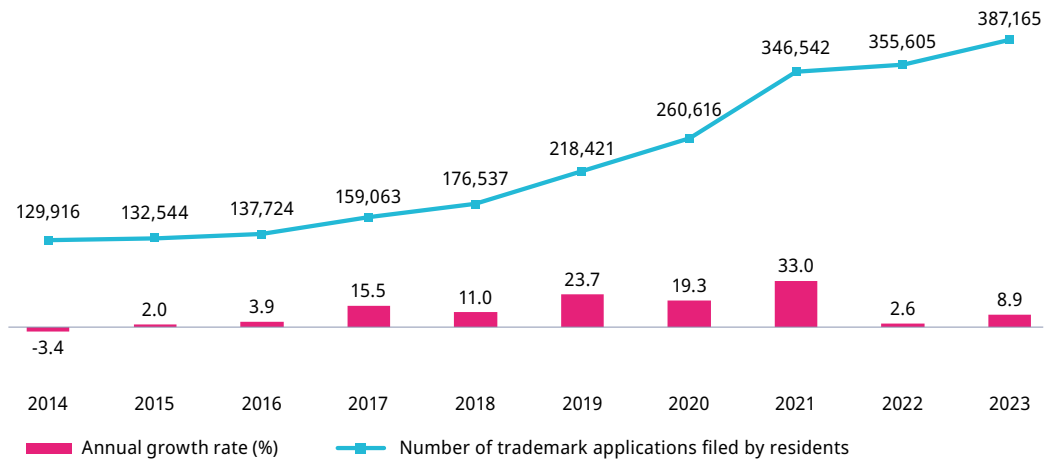
Between 2014 and 2023, IP applications by residents in Brazil grew across patents, trademarks and industrial designs (figures 1, 2 and 3).⁹ Factors such as the volume of Brazilian scientific and technological production, for example, demonstrate the broad national potential to generate knowledge. Although Brazil ranks 14th globally in the production of scientific publications, that research has not yet fully translated into domestic IP development. Nonetheless, the volume of IP registrations is increasing.

Figure 1 Patent applications filed by residents, evolution and annual growth rate (2014-2023)



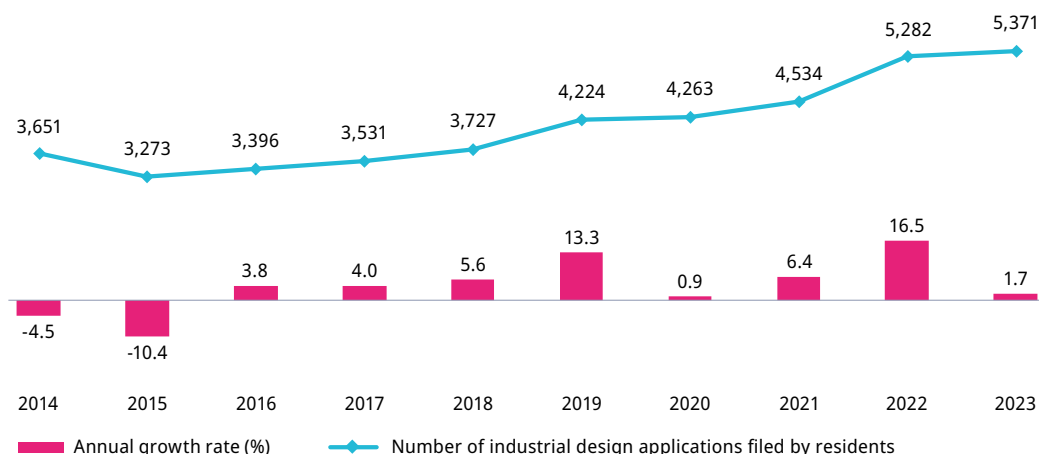
Source: INPI, 2024.

Figure 2 Trademark applications filed by residents, evolution and annual growth rate (2014-2023)



Source: INPI, 2024.

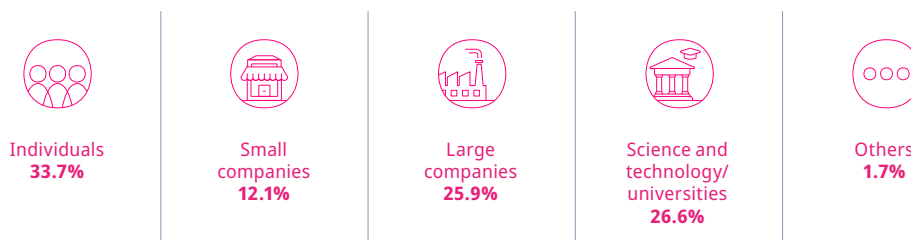
Figure 3. Industrial design applications filed by residents, evolution and annual growth rate (2014-2023)



Source: INPI, 2024.

In 2023, Brazilian residents filed more than 7,400 patent applications, representing 26.6 per cent of total applications. That percentage was in line with those of previous years: 24.7 per cent in 2022 and 27 per cent in 2021. As can be seen in figure 4, individuals made up the largest group of applicants, with 33.7 per cent of applications, followed by universities and ICTs (26.6 per cent), large companies (25.9 per cent), and micro- and small businesses (12.1 per cent).

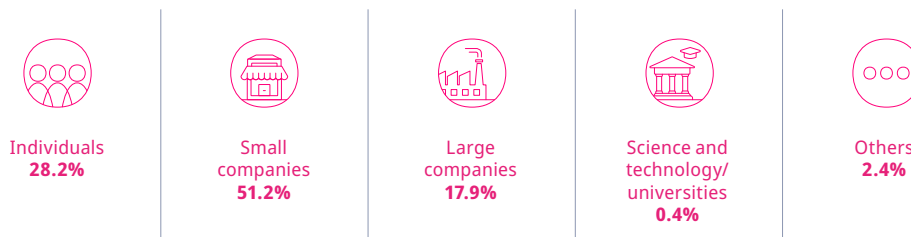
Figure 4 Profile of patent applicants in Brazil (2023)



Source: INPI, 2024.

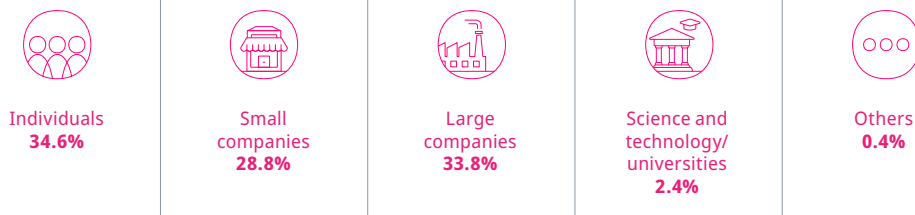
Unlike with patents, Brazilian residents dominated trademark registration requests, filing 387,163 applications and surpassing by a large margin those filed by non-residents. Micro- and small businesses accounted for 51.2 per cent of the applications (figure 5), followed by individuals (28.2 per cent) and large companies (17.9 per cent).

Figure 5 Profile of trademark applicants in Brazil (2023)



Source: INPI, 2024.

For industrial designs, residents filed 5,371 applications in 2023, with a more balanced distribution: individuals, large companies, and micro- and small enterprises accounted for 34.6 per cent, 33.8 per cent and 28.8 per cent, respectively (figure 6).

Figure 6 Profile of industrial design applicants in Brazil (2023)

Source: INPI, 2024.

ICTs played a much smaller role in those two areas, accounting for just 0.4 per cent of trademark applications and 2.4 per cent of industrial design applications.

The National Innovation System

The National Innovation System (NIS) in Brazil is an integrated network of institutions, legal and regulatory frameworks, financial systems and incentive policies.¹⁰ The concept is that innovation thrives through coordinated interaction between institutions. The Government drives the NIS in two ways: indirectly, by creating legal frameworks and tax breaks for R&D; and directly, by funding innovation initiatives and establishing public universities and research centers. A network of public development banks strengthens the system by providing loans and grants to research institutions and businesses.

Collaboration between ICTs and industry is vital. Under Act No. 10.973 (the Innovation Act) of December 2, 2004, ICTs are required to establish technology innovation centers (NITs). That has boosted collaboration between academia and industry significantly. The centers help ICTs to manage their innovation policies and, among other things, manage the institutions' IP applications, negotiate licenses and evaluate developed technologies. The Act encourages innovation in two key ways. First, it allows for revenue sharing between ICTs and their researchers when technology is marketed. That gives inventors a financial stake in their innovations and generates funding for future research. Second, it facilitates technology transfer to industry, fostering the launch of new local startups and expanding university-based technology parks.

ICTs and their NITs have helped to build innovation capabilities in Brazil. However, the NIS needs further development in two areas: there is a need to strengthen innovation culture in business and to broaden access to R&D funding.¹¹ The Government is addressing those priorities, in particular through the legal framework for science, technology and innovation (ST&I). The framework is comprised of a raft of legal reforms, such as the Innovation Act, which provide a roadmap for scientific and technological development in Brazil.

National IP Strategy (ENPI)

The Government's approach to IP is enshrined in the National IP Strategy, which was launched in 2021 under Decree No. 10.886.

The strategy has five main goals:

- Strengthening governance by coordinating policy with IP institutions
- Encouraging innovation and entrepreneurship by making IP protection accessible to companies of all sizes, especially startups and small and medium-sized enterprises (SMEs), and by promoting a culture of innovation
- Facilitating access to and protection of IP by simplifying registration processes and reducing processing times
- Stimulating knowledge generation and training through expanded IP education across academia, industry and government
- Protecting and valuing knowledge assets by encouraging the strategic use of intangible assets and combatting unfair practices and piracy

The strategy includes specific actions to:

- improve technical capacity;
- enhance infrastructure support for innovation;
- strengthen IP protection mechanisms; and
- strengthen public-private partnerships to develop new financing mechanisms, including the use of IP as collateral.

The strategy is the result of collaboration between government and civil society institutions participating in the Interministerial Group on Intellectual Property (box 1).

Box 1. Interministerial Group on Intellectual Property

The Interministerial Group on Intellectual Property (GIPI) coordinates the National IP Strategy, building specific and cross-cutting national IP policies. It also brings together representatives from ministries and civil society institutions involved in innovation, science, technology and IP development.

Established in the 1990s to improve IP management governance, the Group is governed in its current form by Decree No. 9.931, of July 23, 2019.

Its main functions include:

- Coordinating government IP initiatives across ministries
- Implementing, monitoring and assessing the National IP Strategy
- Fostering consistency in actions, programs, projects and initiatives across all ministries and other bodies, with a view to ensuring a harmonized approach to issues such as patents, trademarks, copyright, efforts to combat piracy and the misuse of IP assets
- Advising the Government on international IP-related treaties, conventions and other instruments
- Promoting good practices and conducting training in the public and private sectors

MDIC chairs the Group through its Secretariat for Competitiveness and Regulatory Policy. The Department of Intellectual Property Policy and Quality Infrastructure serves as its executive secretariat. That coordination structure ensures that IP policies align with national goals on economic and industrial development and innovation.

Voting members of the Group include: the Civil House of the Presidency of the Republic; Ministry of Agriculture, Livestock and Supply; MCTI; MinC; Ministry of Communications; Ministry of Defense; Ministry of Education; Ministry of Finance; Ministry of Justice and Public Security; Ministry of the Environment and Climate Change; Ministry of Foreign Affairs; and Ministry of Health. The INPI participates in all meetings.

The Group also includes 24 civil society representatives, who serve for two-year terms. They represent the health, industry, agribusiness, audiovisual, music, software, international trade and university sectors. Other ministries, agencies and experts are sometimes invited to join in the Group's discussions. This diverse composition allows the Group to take a broad, cross-cutting approach to IP issues.

Two-year action plans are conducted to implement specific initiatives under the strategy. Under the first action plan, for the period 2021-2023, 49 of the total 210 initiatives contained in the strategy were prioritized. They included reducing the patent backlog, promoting IP education in schools and creating an online portal to centralize IP information. Goals under the 2023-2025 plan include reducing patent pending times to three years by the end of 2025, strengthening anti-piracy measures, enhancing business training in IP, promoting sustainable technologies and organizing IP training initiatives through partnerships between MDIC, INPI, the World Intellectual Property Organization (WIPO) and the Ministry of Education. The recently launched 2025-2027 action plan focuses on local socioeconomic development issues, the role of IP in providing incentives for sustainable solutions, and fostering technology transfer between ICTs

and industry. The Interministerial Group on IP (GIPI) is thereby integrating IP into the country's broader development strategy.

The national development policy also focuses on IP. In 2024, the Federal Government launched its New Industry Brazil (NIB) program, a 10-year vision to strengthen national industry. Its strategic goals are focused on six missions covering infrastructure; sustainable sanitation, housing and mobility; sustainable and digital agrifood business chains; the health economic and industrial complex; digital transformation of industry; bioeconomy, decarbonization, and energy transition and security; and technology for national sovereignty and defense. Thereunder, IP serves as a cross-cutting instrument to contribute to all six missions. One year after its launch, a total of R\$342.7 billion (Brazilian reais) have been invested in the program, spread over more than 168 projects relating to the six missions under the policy on industry, marking the State's return as the main driver of national development. The aim is to boost industrial competitiveness, create jobs and promote innovation.

IP sits at the heart of this industry policy, as various initiatives under the National IP Strategy show. For example, in support of the agro-industrial chains mission, the GIPI approved the development of a digital platform to monitor and trace geographical indications. Under the mission concerning the health-care economic-industrial complex, an analytical information panel on patent applications relating to pharmaceutical technologies filed in Brazil was delivered to support strategic decision-making in health care. For the bioeconomy and decarbonization mission, the Strategy provides IP training for actors working in the Amazon region's innovation ecosystem. As for the national defense mission, the aim is to create fast-track mechanisms to process requests relating to national defense, with a focus on strategic technological advancement, which is key to consolidating the defense industry's production chains.

Legal and regulatory aspects of IP financing in Brazil

The Industrial Property Act protects intellectual creations in industry, trade and service provision, and deals with unfair competition.¹² It establishes the legal ownership regimes for trademarks, patents, industrial designs and geographical indications. The Copyright Act protects intellectual creations of an artistic, literary and scientific nature, enshrining copyright and related rights.¹³ Software is also afforded a special form of copyright protection under Act No. 9.609 of February 19, 1998, on software protection. Brazil also has three forms of sui generis protection: the Plant Varieties Act,¹⁴ which protects new species of plant hybrids (varieties created through genetic improvement programs), the Integrated Circuit Topography Act¹⁵ and the Biodiversity Act,¹⁶ which regulates access to genetic resources and traditional knowledge.

The Innovation Act enables direct investment by the State in innovative companies and promotes partnerships between universities and companies to facilitate the creation of innovation-friendly environments.¹⁷ The New Innovation Framework expanded provisions of the Innovation Act, simplifying processes for technology transfer and the creation of startups, introducing new financing instruments and strengthening ST&I governance.¹⁸

Three additional laws support innovation financing: the so-called Lei do Bem ("good law") provides tax incentives for contributions to R&D and innovation; the Accounting Convergence Act regulates bookkeeping and the preparation of financial statements relating to intangible assets; and the Information Technology Act provides tax incentives to enhance training and competitiveness in information technology (IT).^{19, 20, 21}

Brazilian law classifies industrial property and copyright as movable assets.²² Under the Civil Code, movable assets can be used as a pledge to guarantee financing.^{23, 24} Therefore, IP assets can legally serve as collateral for loans and other types of financing. The Tax Enforcement Act sets priorities for the judicial collection of public debt owed to the Government and measures for recovering debt, whereby IP assets are among the last to be affected.²⁵ In that way, companies' key assets are protected in the country by law.

IP assets are used in Brazil as collateral in labor and tax lawsuits, judicial recovery, and bankruptcy proceedings. There is no legal impediment to using IP for financing, but such

use is limited, in part because of the Basel Recommendations, which are set by the Bank for International Settlements to ensure financial stability.

Basel III was introduced after the 2008 financial crisis to reduce risk and prevent the spread of systemic financial crises to the real economy. Institutions have since increased their capacity to absorb unexpected losses through recommendations relating to the quality and quantity of capital.²⁶ Brazil is one of the 45 member countries of the Basel Committee on Banking Supervision and has been implementing the Basel Recommendations since 2013 through the rules of the National Monetary Council and the Central Bank of Brazil.²⁷

Brazil updated its financial rules in 2021 through Council Resolution No. 4.966,²⁸ bringing them into line with international standard IFRS 9²⁹ and the Brazilian CPC 48,³⁰ thereby improving the risk analysis of financial operations. The resolution changed the way Brazilian institutions calculate the provision for doubtful loan recoveries, improving the accounting of expected losses in the loan portfolio, including in relation to financial guarantees provided.

Under those rules, the expected loss associated with credit risk is assessed following minimum parameters, such as liquidity and the expected present value (EPV) of guarantees or collateral. That includes assessing how economic conditions affect their value. The estimate must be based on the fair value of the guarantees or collateral, or on the estimated costs of and terms for the execution, sale and receipt of the guarantees or collateral.

Intangible assets, especially those relating to IP, face two challenges as collateral. The first is the difficulty in determining their value without harmonized valuation standards. The second is the absence of a secondary market for trading IP assets results in their illiquidity. IP assets thus do not meet the capital eligibility criteria under the Basel Recommendations, increasing credit and market risks associated with them. Intangible assets used as collateral would not offer capital relief, making banks less likely to accept IP assets as loan security.

National financial system and innovation financing in Brazil

The national financial system is composed of institutions and bodies involved in financial intermediation, regulation and market supervision. It has two main subsystems, one regulatory and the other dealing with financial intermediation. Under the former, the National Monetary Council sets guidelines for monetary, credit and exchange policies. The Central Bank of Brazil implements the Council's decisions while supervising financial institutions, controlling inflation and managing exchange rates.

The intermediation subsystem operates through commercial and multiple banks,³¹ which collect deposits and provide credit to businesses and consumers. The system also encompasses diverse institutions such as insurance companies, real estate credit societies and brokers, each with specific financial market functions.³²

Credit unions offer a promising alternative for low-cost financing for small businesses, since, unlike traditional banks, they focus on member needs.

Public banks such as Banco do Brasil, Caixa Econômica Federal and BNDES play a crucial role in the financial system in Brazil. Each has distinct functions in supporting economic and social development policies, especially in long-term financing and support for government programs. BNDES is the country's largest development bank, whereas Banco do Brasil, a mixed-capital company under federal control, and Caixa, a federal public company, act as commercial banks with broader social mandates. They provide a variety of funding opportunities and assistance programs.

The rise of fintech and the digitization of banking services has intensified competition and fostered financial inclusion.³³ However, the commercial banking sector remains highly concentrated around five major banks: the aforementioned public banks, Banco do Brasil and Caixa Econômica Federal, and three private banks, Itaú Unibanco, Bradesco and Santander Brazil. They are the leaders in terms of deposit accounts and lending services. Despite economic

challenges since 2020, their financial performance has remained strong. The sector's liquid profit reached R\$145 billion in 2023, a 5 per cent increase over the previous year.³⁴

Two major public financial institutions, BNDES and Financiadora de Estudos e Projetos (FINEP, Funding Agency for Studies and Projects, the country's innovation agency),³⁵ drive development in Brazil. BNDES, linked to MDIC, is the main source of long-term financing and investment across economic sectors through its main bank, BNDES Participações S.A. (BNDESPAR, capital markets) and Special Agency for Industrial Financing (FINAME, essentially for machinery and equipment). FINEP (box 2), under MCTI, leads the way in providing economic support for innovation by promoting national companies' competitiveness with resources provided by the National Fund for Scientific and Technological Development (FNDCT).

Types of financing and the institutions involved

Innovation financing in Brazil can be broken down into two distinct categories: funding to generate intangible assets, and IP-based financing as collateral. Financing for research to develop new technologies, using collateral such as real estate, personal assets or guarantees, is well developed in Brazil but IP-backed lending much less so.

Obtaining external financing depends on the balance between risk and return. As lenders assess risk, the company seeking funds must convince lenders and investors of the potential return its IP can generate. Failed projects are often viewed as sunk costs that hurt debt repayment, but IP assets may retain value through potential sale or licensing. Financial institutions granting funds use Value at Risk (VaR) calculations and credit policy to mitigate risk. The relevance of IP assets varies depending on the company's level of development and the competitive structure of the market in which it operates.

In addition to loans, companies may benefit from purpose-specific financing,³⁶ which can be in the form of revolving credit lines or sector-specific funds. The latter can provide better terms, as it is usually provided by public institutions like BNDES and FINEP. Loans and financing, as opposed to other forms of funding, are geared to companies sufficiently developed to operate at a lower level of risk.

Subsidies target higher-risk operations, like startups and SMEs. They come from government agencies or the third sector, such as non-governmental organizations (NGOs), foundations and research institutes. They aim to promote scientific, cultural or artistic endeavors. According to the FINEP subsidy manual, such endeavors address market gaps where private sector interest is low or where financial and human capital barriers make private initiatives challenging.³⁷

To access these subsidies, financial institutions typically require a minimum capital contribution in the form of joint investments in order to share the risk or increase the share of capital from its recipients to signal its commitment and reduce risks.³⁸ The companies are subject to mandatory reporting of financial information, especially since some financing in this modality depends on the achievement of established goals or on the verification of disbursements made.

In Brazil, FINEP directs subsidies for innovation, using resources provided by FNDCT. In 2024, for example, FINEP launched 11 funding calls with a total value of R\$2.18 billion for its "Mais Inovação" (More Innovation) program under the NIB. Ten calls target companies and one is focused on ST&I in the health sector. By 2028, FINEP and BNDES will have distributed a total of R\$66 billion in funding.

For high-value, moderate-risk investments, equity funding offers another path. Financial institutions make capital contributions in exchange for a share of capital ownership, aiming to increase the value of the investment, receive dividends, or both. Typical sources of equity investment include angel investors, consortiums, venture capital firms and private equity firms. Each financing method described above is different and may be better suited for particular stages of a company's development. They may also be combined. For example, sectoral funds in Brazil sometimes mix debt financing with subsidies.

Financing for ST&I comes from public and private sources, with federal funding providing the largest volume through FNDCT programs.³⁹ Public options also include credit and financing through BNDES, FINEP, sectoral innovation programs, subsidies, and local funding through states and municipalities, and from research support foundations. Private options include venture capital, investment funds, accelerators, incubators and angel investors.

The idea behind the sectoral funds is to channel public resources to strengthen the ST&I system, through stable financing and a new management model (involving diverse social segments), and by promoting synergy among research centers, universities and industry.⁴⁰ FNDCT funds come from various sources, including from royalties on the production of oil and natural gas, revenue of the Contribution for Intervention in the Economic Domain, and from the Treasury.⁴¹

FINEP operates across the scientific and technological development cycle, from research funding to production. There are three types of funding: non-reimbursable, reimbursable and capital contribution. Non-reimbursable financing supports research institutions, cooperation projects between ICTs and companies, and subsidies to companies. Reimbursable loans are used to fund companies' technological development projects. With the third type, FINEP makes capital contributions and becomes a partner in innovative companies and in investment funds authorized by the Securities and Exchange Commission (CVM).

BNDES focuses on infrastructure and large enterprises, but also supports businesses of all sizes and in all sectors. In the first half of 2024, it disbursed R\$49.3 billion, with R\$22.4 billion to support micro-, small and medium-sized enterprises (MSMEs).⁴²

BNDES lends directly and works with accredited financial institutions. Direct financing involves BNDES lending straight to qualified companies for projects worth more than R\$20 million.⁴³ The BNDES Finem product targets firms engaged in broad expansion and modernization projects across the industry, trade and services sectors.

In indirect operations, partner banks handle financing analysis and credit decisions, assuming the credit risk, while following BNDES guidelines. Indirect financing may be automatic or non-automatic. Automatic operations, for financing of up to R\$150 million, do not require prior BNDES evaluation. After analysis by the accredited institution, BNDES releases the funds, where approved. Such financing includes BNDES FINAME for machinery and equipment and BNDES Card for smaller purchases. Non-automatic operations, starting at R\$20 million, require BNDES evaluation after assessment by the partner bank.

By the end of 2026, BNDES will have made available R\$300 billion, with lines of credit for projects aligned with NIB missions. In all, funding in this period will reach R\$548 billion.⁴⁴ Entities such as the Brazilian Industrial Research and Innovation Corporation (EMBRAPII), Caixa, Banco do Brasil, Banco do Noreste (BNB), Banco da Amazônia (Basa) and FINEP are also involved in implementing the program. A key undertaking in this context, involving extensive use of IP, is the R\$250 billion Biotechnology Investment Fund for startups focused on highly complex science and technology. It is backed by BNDES, FINEP and private investors.⁴⁵

IP financing ecosystem in Brazil

Based on the overview of innovation in Brazil and statistics relating to the profile of IP applicants there, we examine in this chapter initiatives undertaken by Brazilian institutions to develop the country's IP finance ecosystem. It presents IP financial support mechanisms for ICTs, MSMEs and startups, and large companies, highlighting the types of specifically IP-related support available that could facilitate the development of IP finance.

In order to stimulate IP protection for participants with limited budgets, INPI offers a discount of at least 50 per cent on certain services. It is available for individual applicants, microenterprises, individual microentrepreneurs, small businesses, cooperatives, ICTs, non-profit organizations and government agencies (provided they do not hold a stake in a company operating in the same field as the registered item). The discounts apply to all registration types and extend to subsequent stages of the grant process.

Scientific, technological and innovation institutions (ICTs)

The Innovation Act strengthened the IP ecosystem in Brazil by better connecting ICTs with industry. Through NITs, Brazilian universities and research centers transform their knowledge into innovative goods and services, and drive the competitiveness of national companies.⁴⁶ That has led to noticeable growth in the number of filings by ICTs, which ranked among the largest groups of Brazilian resident patent applicants in 2024.⁴⁷

Public ICTs rely on government funding rather than private loans. Key funders include the Ministry of Education's Federal Agency for Support and Evaluation of Graduate Education (CAPES), the National Council for Scientific and Technological Development (CNPq), research support foundations (FAPs),⁴⁸ BNDES and FINEP.

To strengthen IP development, the national IP strategy proposes including requirements relating to IP and technology transfer for the programs and funding calls of CAPES, FINEP, CNPq and entities linked to MCTI. In its 2024 Action Plan, INPI proposed including a standardized IP clause in innovation funding calls issued by FINEP and BNDES.⁴⁹ That has been implemented in technical cooperation agreements with the National Confederation of State Research Support Foundations (CONFAP)⁵⁰ and FINEP.⁵¹ Some of the IP clauses incorporated into innovation funding calls include: scoring the IP portfolio as a differentiator among competitors in a freedom-to-operate analysis, a requirement to file IP applications (with possible co-ownership with the funding agency), and IP training for beneficiaries. Such requirements create a clear marketing pathway: researchers and developers verify that the technologies developed do not infringe third-party rights, secure rights to their innovations and prevent unauthorized exploitation. For funding institutions, laboratories, departments and ICTs, the co-ownership of IP rights makes it possible to generate revenue, as enshrined in the Innovation Act.⁵² By co-owning IP, ICTs can license technologies, negotiate royalties or participate in commercial ventures, generating income that can be reinvested in future research, innovation and infrastructure. That creates a sustainable cycle of funding and innovation, ensuring long-term growth and development.

EMBRAPII: Bringing research and industry together

While FINEP provides direct funding (see box 3), EMBRAPII acts as a link between academia and industry, bringing together ICTs, technology parks and private institutions. Founded in 2013, its mission is to help technological research institutions to foster innovation in Brazilian industry and thereby make it more innovative and technologically competitive at home and abroad.

EMBRAPII has a management contract with MCTI, MDIC and the Ministries of Education and Health. INPI, meanwhile, works with EMBRAPII by delivering IP management training to companies and accredited ICTs and providing support for patent applications and other registrations.

Through public and private research institutions, EMBRAPII shares risk in the pre-competitive phase of innovation. Using a co-funding model, it typically covers one third of project costs, increasing to half in priority areas like health, energy and sustainability. It does not directly carry out projects. Instead, it selects research institutions, such as universities and research centers, with technological expertise and cutting-edge infrastructure, to act as EMBRAPII units, of which there are currently 87. They develop joint projects with companies through a network of 10,000 scientists.

The approval process is more straightforward than is the case with other sources of public funding. Companies and EMBRAPII units can start projects without relying on public notices, which fosters agility in the development of innovations. Since 2014, EMBRAPII has supported 2,200 companies and invested more than R\$6 billion in corporate R&D projects.⁵³ Under the NIB, EMBRAPII recently invested R\$800 million in 411 decarbonization and energy transition projects, partnering with 69 EMBRAPII Units and 379 companies.

MSMEs

MSMEs represent almost 99 per cent of all Brazilian companies, generating approximately 27 per cent of gross domestic product (GDP),⁵⁴ and account for 60 per cent of all formal jobs in the private sector. Companies on this scale drive innovation through their ability to adapt quickly to market

changes and customer needs, but they struggle to secure loans and find skilled workers. Individual microentrepreneurs make up between 70 and 75 per cent of Brazilian companies but rarely generate IP assets. In contrast, the country's more than 12,000 startups show enormous innovation potential, particularly in the education, health and wellness, and IT sectors.⁵⁵ Mainly concentrated in the Southeast of the country, they typically focus on business-to-business (B2B) solutions.

Small innovative companies often lack funds to self-finance and must seek external support. The Government of Brazil offers them government-subsidized rates, technical support and IP strategy assistance. Those programs can be instrumental in developing IP finance in Brazil.

SEBRAE offers MSMEs a range of capacity-building and other support initiatives relating to IP. They include programs that connect universities with businesses, such as Catalisa ICT. Under cooperation agreements with MDIC and INPI, SEBRAE offers IP training for startups enrolled in the Catalisa ICT program and solutions to facilitate access to financing. Participants also have access to networking, investment opportunities, training and specialized mentoring. SEBRAE also works with cooperatives and entrepreneurs on geographical indications (box 2).

Box 2. Financial cooperatives: boosting the local economy through geographical indications

The Financial Cooperatives System (SICOOB) and SEBRAE have partnered to help local and regional entrepreneurs to raise their profile with geographical indications. This type of IP identifies the origin of a product or service that has certain qualities arising from its geographical origin or that is associated with a specific place. Geographical indications help to preserve local traditions, differentiate products and services, improve market access and promote regional development.

Geographical indications are more common in rural areas and facilitate partnerships focused on local development and directly benefiting the populations of those regions. This model promotes job creation and income generation in small properties and helps to stem migration to urban centers.

In 2024, SICOOB had more than 8.2 million members, with 300 individual cooperatives serving more than 2,405 municipalities. By 2024, INPI had recognized 131 geographical indications across more than 470 municipalities and involving around 95,000 producers. Under the partnership between SICOOB and SEBRAE, the latter will provide training on geographical indications for entrepreneurs, initially focused on coffee and wine geographical indications.

Through the Micro- and Small Enterprise Guarantee Fund (FAMPE), SICOOB is the leader in the provision of credit guarantees for cooperatives, backing R\$2.5 billion in loans with R\$1.9 billion in guarantees.⁵⁶

FINEP offers a range of programs for funding companies, among which the following stand out: FINEP Startup, which focuses on early-stage startups with high growth potential that are developing innovative solutions; Inovacred, which offers credit lines for innovative companies of all sizes to finance R&D and innovation projects; and Tecnova, which supports technological innovation projects in partnership with R&D institutions.⁵⁷

INPI and FINEP teams are working together to integrate patent data into funding decisions. FINEP uses patent applications to assign a score for applicants, treating the IP portfolio as an innovation indicator.

Box 3. The FINEP IP program

The financing work of FINEP is focused on the following areas:

- Enabling the Brazilian economy to face national and global challenges through innovation
- Fostering ongoing R&D in companies
- Helping innovative companies to break into national and global markets

- Boosting the competitiveness of Brazilian companies and institutions
- Mitigating the external vulnerability of national companies and institutions in technology-intensive segments
- Stimulating the participation of private capital in innovation
- Backing innovations that promote sustainability

FINEP grants reimbursable and non-reimbursable resources to Brazilian research institutions and companies. Its support covers the whole scientific and technological development cycle: basic research, applied research, innovation and development of products, services and processes. FINEP also supports the incubation of technology-based companies, the implementation of technology parks, the structuring and consolidation of research processes, development and innovation in already established companies, and the development of markets.

Context

The aim of the FINEP IP program is to support the feasibility testing of new products, processes and services based on IP assets, including patents developed by ICTs. The public call for interest in funding, launched on June 28, 2022, was the first in the history of FINEP to be operated as a continuous flow, rather than having a fixed deadline. That was because the kind of projects in question require time for coordination between companies and ICTs in order to reach a partnership agreement.

In its work with NITs, universities and companies, FINEP has found that the process of transferring the technology of IP assets from ICTs to the market is complex and that it requires specific resources to mitigate risk. Thus, for this funding call, resources in the form of subsidies were made available to absorb the business risk and thereby encourage companies to seek IP assets in the ICT environment and increase technological maturity to test the business viability of those assets.

Target audience

The target audience is made up of Brazilian companies and other for-profit entities, working with ICTs that have IP assets. Projects involving IP assets developed jointly by a company and ICT can also be supported, as well as arrangements with a variety of companies of different sizes.

Operating model

FINEP runs the program, which consists of subsidies, directly using FNDCT resources.

Support goes to projects that include a “proof of concept” stage and other activities to test the viability of technology that is between technology readiness levels (TRL) 3 and 7 and for which the project aims to reach TRL 7 (demonstration of the system prototype in an operational environment). The amount requested for the subsidy to carry out the project must be between R\$1.5 million and R\$5 million.

Projects are evaluated in the following stages:

- Verification of aspects such as the eligibility and financial capacity of beneficiaries, submission of documents and compliance with the requirements set forth in the funding call regulations
- Assessment of the consistency of the proposal with the call, the relevance of the expected innovations and the degree to which they are novel

Proposals deemed consistent with a call and that obtain the minimum required score are selected for support, in the order in which they are received, up to the limit of available resources.

Requirements and restrictions

Fundable items: Support is provided to cover expenses for technical and commercial development of the IP and possible costs of access to IP materials and content from the owner ICT, such as consultancy for carrying out the proof of concept.

Expenses to access IP, whether in the form of licensing, assignment or acquisition after testing, remain the responsibility of the company concerned.

Resource limit: FNDCT is providing up to R\$145 million for the program.

Partial results

FINEP regularly publishes the partial results of projects already evaluated.⁵⁸ The position in June 2024 was as follows:

146 projects received
R\$579,803,518.44 in
funding requested

17 projects
approved/contracted
R\$64,255,594.34

Projects from companies in 15 states involving more than 60 ICTs from around the country have been received. Considering its specific nature, the funding call has been quite successful thus far, with the initial R\$75 million in available resources lifted in 2023 to R\$145 million

Through its BNDES Garagem program, BNDES helps startups to develop a minimum viable product (MVP) and accelerate growth. It uses a balanced scorecard approached with a SWOT (strengths, weaknesses, opportunities and threats) analysis, whereby IP assets (where relevant to the business) are analyzed before all other intangibles, with a focus on ascertaining ownership and strength of protection.⁵⁹

BNDES also supports innovation through direct equity investments and investment funds. Via its BNDESPAR program, it invests across all development stages – from startups to mature companies – through funds, debentures and shares. To help smaller firms to meet guarantee requirements, BNDES created the BNDES FGI (an investment funds guarantee), which complements guarantees offered by companies and thereby increases the chances of approval or of obtaining better conditions.

Unlike FINEP, BNDES lacks a specific funding line for IP. However, the bank allows the use of its BNDES Card,⁶⁰ a product designed to provide credit to finance the investments of MSMEs and individual entrepreneurs, to cover expenses incurred in securing IP. Adding a low-interest line to the BNDES Card for IP services could support strategic IP management, brand and technology valuation, and efforts to secure market exclusivity.

The National Association of Entities Promoting Science and Technology Entrepreneurs (ANPROTEC) works with INPI to strengthen IP practices across the country's innovation network and encourage the use of IP as a competitive tool that allows commercialization of these assets. INPI develops content and a community of practice for ANPROTEC members, supporting knowledge about IP in business incubators, accelerators and technology parks, and generating joint data and indicators on the use of IP rights.

Private investment funds focus on innovative startups that are scalable, offer high potential returns and own IP assets.⁶¹ They analyze an applicant's IP for its potential to increase or validate the company's value and market competitiveness. However, the legal protection conferred by IP registration is commonly used as a defensive tool against competition rather than as an investment asset.⁶²

Regarding scalability, funds assess potential through validation with customers to understand the pain points solved by the IP, the problem severity, market size, customers' willingness to pay and potential to multiply the investment in five years.⁶³ Their investment due diligence includes verifying IP ownership, although IP assets are not viewed as collateral, in part because secondary markets are not sufficiently developed.⁶⁴

Interviews conducted by the consultancy for this report reveal that the biggest challenge concerns the lack of standalone value for IP assets, combined with a high risk of company failure. Investors see the value of IP in how it can be exploited as a cash generator. According to one private investment fund representative, patenting has limited practical benefit owing to long lead times to grant the underlying rights and enforcement challenges. The same representative said that a faster and less bureaucratic examination process would be needed for IP to be considered a strategic asset.

Large companies

Only 1 per cent of Brazilian companies are corporations and they drive innovation through their established R&D structures. However, many large Brazilian companies rely on public bank loans to fund technological innovation. BNDES plays a major role in corporate innovation financing. Its Mais Inovação program offers more favorable lending terms than other financing lines. With R\$8.4 billion, the program accepts real and personal guarantees.⁶⁵ However, IP is ineligible as collateral. INPI serves as a business plan evaluator for BNDES programs, assessing the degree of innovation, potential market impact and technological risk. Owing to the requirements of real profit taxation, tax incentives primarily benefit larger companies.⁶⁶ Such incentives encourage research and technological innovation, but they do not mandate the use of IP by the funded companies. That, in turn, allows companies with low IP maturity to avoid investing in original research.

A private bank interviewed for this report identified key requirements for IP-backed lending: reduced asset volatility and streamlined enforcement procedures. It also noted that building a secondary market for IP assets, as opposed to tangible assets, presents certain challenges. For instance, in one case a trademark offered as collateral was deemed in court to be essential to business operations, preventing its seizure during insolvency. That kind of challenge with regard to the enforcement of IP rights extends beyond private lending to broader corporate transactions. During bankruptcy, legal recovery or government debt proceedings, the IP assets of large companies can be seized. The INPI IP Database (BADEPI) facilitates the identification of IP assets and their owners, making it easier to seize registered IP. A key question in such cases, with which Brazil to date has had limited experience, is how to value and transfer seized IP to generate value for creditors. Auctions offer one path for transferring seized IP assets, which could go some way to addressing valuation challenges.

IP value is also linked to the defense of competition. In that regard, INPI and the Administrative Council for Economic Defense (CADE) work together.

For example, the merger of Suzano and Fibria in 2019 created the world's largest cellulose producer, with IP playing a central role in the transaction's valuation. Fibria's robust patent portfolio, the assets behind innovative products such as low-carbon cellulose and high-yield eucalyptus varieties, was a significant factor in valuing the combined entity's worth. Valuers combined income-based and market-based approaches to assess the IP assets' value.⁶⁷

IP valuation expertise is becoming increasingly critical as the economy grows and M&A activity increases. A clear understanding of IP valuation, protection and transfer is essential. Ongoing cooperation between CADE, MDIC and INPI ensures that M&A activities promote competition and innovation.

Main challenges for IP-backed financing in Brazil

In this chapter, we examine key challenges in expanding IP-backed financing and propose solutions designed to strengthen its role in Brazilian financial markets.

Brazil has established innovation financing mechanisms but remains in the early stages when it comes to using IP as collateral. One major obstacle to the granting of credit to MSMEs is the lack of guarantees. Guarantee funds, such as those managed by BNDES and SEBRAE, play a fundamental role in facilitating access to credit. However, the complexity of the financial ecosystem exacerbates the difficulties faced by companies.⁶⁸ Thus, even with existing mechanisms, significant barriers persist that restrict effective access to financing.

A dedicated guarantee fund, financed with public or a mix of public and private resources, could unlock IP-backed financing by mitigating risks for financial institutions lending to IP-intensive companies.

Stakeholder interviews revealed two key challenges in using IP assets as collateral. The first centers on valuation complexity. IP valuation is linked to the asset's context, including its technological potential, the competitive landscape and business model. Beyond legal protection, market readiness and the potential of the IP asset to generate revenue increase its value.

The second key challenge is the need to promote the strategic use by companies of their IP, ensuring it is well integrated into their innovation efforts. That means developing better methods for tracking intangible assets, determining optimal exploitation strategies (potentially including the creation of a separate IP business unit) and consistently integrating IP into the overall business strategy. To reduce the volatility of assets, it is important to have a technological prospecting strategy or a mechanism for monitoring the technological landscape and competition.

IP valuation

Assessing the financial value of IP presents unique challenges. Several uncertainties are inherent in many IP assets, such as technological risks, the R&D stage, industrial scalability, competing technologies and market potential. Technology assessment precedes valuation, making it possible to understand risks and gather relevant information for valuation. The objective of valuation is not to predict the exact value of the technology, but to determine an expected value that captures the associated risks and uncertainties.

Which valuation methodologies to use depends on the purpose of the exercise, since the estimated value is contextual. Potential purposes include:

- Transactions: acquisition, assignment or licensing and ownership-sharing
- Decision-making: investments relating to the IP portfolio
- Financial requirements: accounting, financial statements, tax benefits and loan guarantees

For financing and bank loan guarantees, companies with valuable IP portfolios can potentially use those assets as collateral to finance growth. Valuation is important for meeting legal requirements, such as providing predictable value for enforcement and for the recovery value of the IP assets in possible secondary markets.

Several methodologies for valuing technology are widely accepted for quantitative IP valuation, depending on the context.⁶⁹

Despite the increase in local patent applications, challenges remain in valuing and selling those assets.⁷⁰ Financial analysts recognize the importance of intangible investments but struggle with the availability of information needed to conduct reliable quantitative valuations.⁷¹ In Brazil, effective valuation will require methodological advances and better disclosure practices.⁷²

Each valuation requires the selection of methods that match the available information and context. No single “best approach” exists. Valuation methods can be applied individually or in combination, based on the business model and associated uncertainties.

IP assets present valuation challenges owing to their inherent volatility. Future cash flows remain vulnerable to shifts in consumer sentiment and technology, even for IP assets already structured as business units.⁷³ For pre-market technologies, uncertainty about future profitability only increases volatility. Successful valuation, therefore, depends on understanding the asset’s maturity and potential to generate cash flow.

Valuing IP assets-based cash flows, known as the income-based method, is a common approach. However, not all IP owners will be able to connect their IP assets to revenue generation directly or indirectly.

Each IP type has different characteristics, which can affect its valuation. In the case of patents, the last years of a patent’s life may have a lower return on investment than the first years, due to obsolescence. That can dilute their quality as a guarantee for financing in the longer term. The stability of trademarks, which can be renewed indefinitely, may provide more reliable guarantees. As with patents, the power of return associated with industrial designs tends to diminish over time.

Market context shapes IP value. For example, liquidity depends on the ability to use IP assets beyond the company. For technology, liquidity may depend on identifying potential buyers or users in specific market niches.

Valuation practices continue to evolve as institutions develop new mechanisms for trading and negotiating technologies. As more technology transfer takes place in Brazil, valuation is more frequently being conducted by NITs, including at the Federal University of Minas Gerais, Federal University of Santa Maria, State University of Campinas and Armed Forces institutions. Some NITs have dedicated teams that perform those functions in-house and for other institutions.

The universities access international databases and apply various valuation methods, including modern approaches that consider intellectual capital in technology development.

A number of references can support the conduct of valuations in Brazil. They include an INPI guide on valuing IP assets,⁷⁴ and similar handbooks published by the International Chamber of Commerce (ICC),⁷⁵ the Brazilian Agricultural Research Corporation (EMBRAPA)⁷⁶ and *Revista IBICT* (2023).⁷⁷ Expanding access to IP valuation services and training, and subsidizing the cost of conducting those studies, could help IP owners to better understand and manage their IP assets. That increased expertise would reduce the volatility of IP value and strengthen the IP financing ecosystem.

Proposals for improving IP consolidation as access to credit

Public institutions in Brazil fund innovation and IP development. In contrast, only a few private banks offer such financing. Even large companies, with tangible assets that could serve as collateral, choose to seek public financing for high-cost, high-risk activities such as innovation.

International experience suggests that institutional and economic challenges limit the use of IP as collateral, despite its potential. Institutional factors include contract law, public registries and international banking regulations, which have a direct bearing on the relationship between borrower and lender and an impact on transaction costs. The economic viability of using IP as collateral depends on the relationship between expected economic benefits and associated costs. IP assets can offer significant advantages in terms of signaling and generating pledgeable income. For IP to be effective as collateral, the institutional and economic aspects must be sufficiently mature.⁷⁸

Brazil has enhanced its innovation ecosystem over time,⁷⁹ but more could be done to bolster the acceptance of IP assets as collateral. If certain obstacles, which are also present in many other countries, are overcome in the long term, progress can be made. The following proposals concern improvements in public funding for innovation, the enforceability of collateral, the consolidation of secondary markets for IP assets and the need to foster the growing maturity of the IP system, including through improved efficiency in IP protection, valuation and enforcement.

Improvements in public funding for innovation

Improvements can still be made with regard to public funding, in particular for IP assets. IP portfolio scoring clauses are already included in the decision-making process and related training is provided for interested businesses. Additional initiatives, such as the use of technological information and the mandatory filing of IP applications for supported projects, with or without co-ownership with the funding agency, could enable beneficiaries to capture further benefits and future licensing opportunities.

Banks do not yet conduct technological information searches for funding and do not require the innovations that they fund to be completely new. However, assessing freedom to operate could help to ensure that the proposed innovation does not use third-party IP.

Funding agencies and developers would reap economic benefits from requiring IP applications to be filed for innovations obtained using public funds, which would prevent exploitation by those who did not contribute to the innovation and enable the generation of new technologies through royalty revenues.

Public banks are often restricted from using IP assets, and indeed other intangible assets, for financing. Assets with lower liquidity, such as most movable assets, including machinery, are particularly difficult to accept as collateral because of restrictions on low-interest loans.⁸⁰ Additionally, the average financing term usually exceeds a decade. For IP assets like patents, for example, a term of more than 10 years significantly diminishes its usefulness as collateral.

The challenges associated with using IP as collateral for bank loans may be addressed in several ways. Establishing a guarantee fund⁸¹ managed by a specialized intermediary would mitigate risks for banks and enable them to accept IP as collateral. Leveraging legal mechanisms, such as fiduciary transfers,⁸² or creating specific liens on IP assets would ensure legal security for lenders. Finally, the use of royalty streams generated from IP licensing or technology transfer agreements as collateral could be a more predictable and easily valued alternative. The aim of such strategies, as adapted to local legal frameworks, is to unlock the potential of intangible assets in the global financial landscape.

Enforceability of collateral

Consolidated IP portfolios can serve as collateral to access new sources of capital such as financing and private equity funds. That can provide IP assets used as collateral with greater legal certainty and help to minimize volatility by enhancing the assets' liquidity.

It is important to understand that when banks analyze the credit risk of collateral, they look solely at the quality of the collateral itself and not the innovation project's potential. They calculate the interest percentage based on the associated risk.⁸³ When determining whether to fund a project, banks consider the stability of the business's cash flow, the balance sheets of the project presented, and potential return on investment and IP assets. Other issues relating to compliance may also be analyzed, such as the suitability of the corporate structure, the client's relationship with the bank and the analysis of the investment.

Expanding the use of IP as collateral requires integrating IP into business operations. Companies must view IP as a strategic tool through the R&D process, not just its end point. That comprehensive approach reduces asset volatility and liquidity risks, making IP assets more attractive as collateral and potentially lowering interest rates.

Companies that align IP exploitation with business strategy show greater resilience. Strong innovation management systems help firms to respond quickly to market changes or disruptive technologies. When businesses demonstrate healthy cash flows, adequate legal protection and commercial scope, they offer greater operational security. Such "visionary businesses" achieve higher long-term returns through mature IP management.

To expand IP-based financing, some of the interviewed stakeholders recommend establishing a joint public-private investment fund, supported by banks and sectoral companies with significant IP potential. Such a fund would address various financing needs, from seed capital to R&D and marketing, with a focus on businesses with valuable IP but limited traditional collateral. By sharing risk, the fund could help to bring down otherwise prohibitive interest rates that often block innovative financing.⁸⁴

To be successful, such a fund's institutional design would need careful consideration. Following the example of sectoral funds,⁸⁵ key decisions would include defining the target audience, identifying resources, balancing support for ST&I funding, and establishing clear roles for institutions like FINEP, BNDES, INPI, CVM and the Central Bank of Brazil. The development stages that qualify for funding would need to be set and an effective governance structure created.

Priority should go to seed capital for startups and spinoffs developing complex technologies. That approach would support high-potential technological sectors while attracting large partner companies that can already act as a secondary market for the underlying IP assets. Fund recipients would need to demonstrate a clear IP strategy that ensures alignment between business strategy, innovation and IP management.

Consolidation of secondary markets

There is a need to develop secondary markets for IP assets in order to facilitate their disposal in the event of default. That, in turn, would make IP assets more attractive as collateral. Even tangible assets face liquidity restraints, and IP assets require additional considerations for ownership transfer. Creating viable secondary markets depends on transforming knowledge into business value and building a stronger IP culture.

IP-based financing offers flexible collateral arrangements. Lenders can accept single assets or a portfolio of assets, or even future protections arising from pledged assets. For example, credit operations secured by future receipts from character licensing agreements for various applications such as toys, clothing, and hygiene and food products already exist. It is important for the lender to certify the existence of the licenses, as well as the due payments and the amounts secured in the contracts. It may be possible to combine intangible assets with tangible ones as security, allowing creditors to fall back on ownership rights as well as the equipment itself or the stock of designer clothes, for example.

Quantitative valuation techniques help to reduce inherent risks and contribute to boosting maturity in the use of IP assets to generate a return on investment. However, secondary market development is still only nascent in Brazil. The use of IP assets to facilitate access to credit will depend on a systemic deepening of awareness of the importance of IP.

A functioning secondary market would strengthen guarantee funds by providing exit options. However, stakeholders underlined in interviews that developing secondary markets remains premature while primary markets continue to evolve. Success requires a deeper systemic understanding of IP fundamentals and broader market participation.

Maturity of the IP system

Increasing IP system maturity and creating opportunities for IP-backed finance require companies to protect and market more competitive innovations. Public policies should enhance the relationship between innovation actors and develop lasting indicators to help Brazil to realize the full potential of its internally produced knowledge. Stakeholders emphasized the need to strengthen INPI, both in terms of accelerating decisions and broadening access to INPI technicians and information. Unlike copyright, which exists upon creation, other IP rights require registration with INPI. Applications cannot guarantee quality protection. Reducing the patent backlog and enabling priority processing will be crucial for establishing legal certainty and exclusive rights. INPI has already implemented priority queues for startups and ICTs to support more fragile players in the innovation ecosystem.

Partnerships between government and technology managers could help to develop robust domestic technology transfer databases, making data available to produce quality IP valuation. Combining Brazilian data with international benchmarks would strengthen market-based valuations, particularly suitable for early-stage technologies, where income-based methods may be less effective.

Maintaining IP value requires strategic IP management. Modernizing legal guarantee frameworks improves the feasibility of using IP assets as collateral, but successful IP also requires broader systemic innovation approaches. That demands multidisciplinary teams and diverse expertise to drive innovation outcomes.

Building mature IP financing requires a coordinated set of initiatives, starting with fostering a culture and awareness of IP while accelerating grant processes. The establishment of an IP collateral fund and development of robust secondary markets would provide essential financial infrastructure. Equally important are standardized valuation methods and better integration of IP assets into corporate accounting. Comprehensive internal policies for knowledge protection would complete the framework. Together, those elements would position IP assets as bankable collateral at home and abroad.

Brazil case studies

Case study 1:

Trademark as loan collateral

Company sector

Tourism

Company location

Brazil

Type of IP rights used

Trademarks and domain names

A technology company in the tourism sector faced cash flow difficulties during the COVID-19 pandemic. As a technology-based company with few physical assets, it struggled to secure funds from traditional financial institutions. A shareholder then offered to provide funding and requested the company's registered trademark as loan collateral.

A brand valuation provided comfort to the investor about the brand's value and the ability for the investor to recover in case of a default.

Valuation process

Valuing an IP asset first requires assessing whether it can be separated from the company. To have a distinguishable value, there must be registered rights that can be transferred and generate value.

In this case, the assets included registered trademarks, trademark applications under review in several countries, domain names and social media handles.

The collateral covered intangible assets as a package that could not easily be separated from the company.

Valuation methodology

In this case, the most appropriate valuation methodology was to determine the cost of recreating the brand. That was estimated using the company's investment in the brand through recent major marketing initiatives, adjusted to present value.

That aligned with the company's business strategy to generate brand value through investments in digital, offline and physical media.

The company's income statement and balance sheet provided a clear history of investments.

The final valuation incorporated illiquidity considerations.⁸⁶

Conclusion

Success relied on an extremely specific situation in which a shareholder had capital committed to the business and was deeply familiar with the operation. The arrangement might not translate easily to third-party lenders without the same level of business involvement and understanding.

Case study 2:

Paquetá Calçados Ltda

Company sector

Footwear

Company location

Sapiranga, Brazil

Type of IP rights used

Trademarks

Institutions or entities that enabled the transaction

Banco Bradesco S.A.

Paquetá Calçados Ltda, a major Brazilian shoe manufacturer from Vale dos Sinos, produces 14 million pairs of shoes annually. In 2007, the company acquired the Ortopé brand through a judicial auction. Paquetá later licensed the Ortopé brand to Dok Group, a struggling shoe manufacturer, structuring licensing fees to support Dok's recovery.

However, Dok eventually defaulted on its payments under the license. During preparations to take action against Dok, an investigation revealed a lien on Ortopé in favor of a third party, Banco Bradesco S.A.

The lien stemmed from a fiduciary transfer, demonstrating the use of IP as loan collateral to support financing.

Source: Paschoini (2024)⁸⁷

Case study 3:

Kunumi AI

Company sector

Artificial intelligence

Company location

Brazil

Type of IP rights used

Trade secrets, software

Institutions or entities that enabled the transaction

Fundepar Investment Company

Bradesco Holding de Investimentos S.A. acquired Kunumi, an artificial intelligence (AI) company founded at the Federal University of Minas Gerais (UFMG) in 2016, marking a significant milestone in collaboration between academia and industry.

Kunumi developed an AI system that mimics brain function, using neural networks to analyze massive databases and solve complex problems. The company built an impressive client portfolio, including major Brazilian companies like Braskem, Suzano and Unimed BH, along with global brands such as Coca-Cola, Spotify and Warner.

The acquisition was enabled by the ST&I legal framework in Brazil, modeled on Stanford University practices. UFMG provided technical know-how and received an equity stake in Kunumi instead of traditional royalty payments, managed by Fundepar Investment Company, the investment arm of the UFMG Support Foundation (Fundep). The company secured two rounds of funding: initial support from the Investment Program in Innovative Companies in 2016, followed by investment from the Investment and Participation Fund (FIP) Seed4Science in 2020.

The deal introduced an unprecedented approach in Brazil by using a share usufruct model, whereby UFMG held rights to benefit from the shares while Fundep maintained control for university compensation in technology transfer. Following the acquisition by Bradesco, UFMG received its portion of the proceeds through Fundep.

Sources: UFMG⁸⁸ and Fundepar⁸⁹

Endnotes

- 1 OECD (2021). Bridging the Gap in the Financing of Intangibles to Support Productivity: Background Paper. OECD Publishing.
- 2 Ocean Tomo (2020). Intangible Asset Market Value Study.
- 3 WIPO and Luiss Business School (2024). World Intangible Investment Highlights. Geneva and Rome.
- 4 Santander. Interview granted to Pris Software, Pris, October 11, 2022.
- 5 The interviews were conducted between October 13, 2022, and April 9, 2023, by the consultancy team that prepared this report, together with representatives of the Ministry of Development, Industry, Trade and Services (MDIC) and INPI.
- 6 WIPO. Global Innovation Index 2024.
- 7 Cagnoni, A.C. (2024). Retrato da inovação no Brasil: o que revela o Global Innovation Index 2024. *Jota*, February 2024.
- 8 Ministry of the Economy (2020). Diagnostico Sistema Nacional de Propriedade Intelectual.
- 9 Trademarks, industrial designs and patents are the IP assets with the highest volume of filings with INPI.
- 10 Christopher Freeman (1987) introduced the term “national innovation system” in the mid-1980s, inspired by his analysis of the economic success of Japan after the Second World War. Freeman argued that its success could not be understood solely by analyzing traditional factors such as capital or labor, but rather by the way the country organized its innovation activities. He noted that the interaction between companies, universities, government and other institutions formed a cohesive system that continuously and sustainably promoted innovation.
- 11 Instituto de Pesquisa Econômica Aplicada (IPEA) (2017). Políticas de apoio à inovação tecnológica no Brasil: avanços recentes, limitações e propostas de ações.
- 12 Act No. 9.279 of May 14, 1996, regulating rights and obligations relating to IP.
- 13 Act No. 9.610 of February 19, 1998, on copyright and related rights.
- 14 Act No. 9.456 of April 25, 1997, on plant varieties.
- 15 Act No. 11.484 of May 31, 2007, on integrated circuit topography.
- 16 Act No. 13.123 of May 20, 2015, on biodiversity.
- 17 Act No. 10.973 of December 2, 2004, on incentives for innovation and scientific and technological research in the productive environment and providing other measures.
- 18 Act No. 13.243 of January 11, 2016, on incentives for scientific and technological development, research and innovation.
- 19 Act No. 11.196 of November 21, 2005.
- 20 Act No. 11.638 of December 28, 2007, on accounting convergence.
- 21 Act No. 13.969 of December 26, 2019, on industrial policy for the information and communication technology sector and the semiconductor sector.
- 22 See Article 5 of the Industrial Property Act and Article 3 of the Copyright Act.

- 23 Act No. 10.406 of January 10, 2002, instituting the Civil Code.
- 24 Section VII of the Civil Code.
- 25 See Act No. 6.830 of September 22, 1980 (Art. 11).
- 26 Bank of International Settlements (June 2011). Basel III: A global regulatory framework for more resilient banks and banking systems.
- 27 Central Bank of Brazil. *Recomendações de Basileia*.
- 28 Central Bank of Brazil (2021). Resolution CMN No. 4.966 of November 25, 2021.
- 29 International Financial Reporting Standards. IFRS 9: Financial instruments.
- 30 Comitê de Pronunciamentos Contábeis. CPC 48: Financial Instruments.
- 31 In Brazil, “commercial banks” offer basic services such as accepting deposits and providing loans, while “multiple banks” are institutions authorized to operate under more than one type of banking license (for example, commercial, investment, real estate), enabling them to offer a wider range of financial services.
- 32 ANBIMA (2022). *Sistema Financeiro Nacional e Participantes do Mercado*.
- 33 Costa, I.S. (2023). *O Estado Fintech: transformação digital das finanças públicas*. Doctoral thesis.
- 34 Central Bank of Brazil (2024). *Relatório de Economia Bancária 2023*.
- 35 It was established under Act No. 61.056 of July 24, 1967.
- 36 Central Bank of Brazil. *Empréstimo e financiamentos*. Available at: www.bcb.gov.br/cidadaniafinanceira/tiposemprestimo.
- 37 FINEP (2010). *Manual de Subvenção Econômica 2010*.
- 38 IPOS International (2021). *Unlocking your IP’s financing potential: How to harness IP’s hidden value when obtaining funding to grow your business*. Available at: iposinternational.com/resources/business-guides/unlocking-your-ips-financing-potential_162.
- 39 FNDCT was established to finance ST&I and promote socioeconomic development in Brazil. It currently has 16 linked sectoral funds, of which 15 are active. Of those, 13 are sector-specific for areas such as health, biotechnology, agribusiness, oil, energy, mineral, aeronautical, space, transport (land and water), water resources, information technology, and one focused on the Legal Amazon. Two transversal funds can be applied in any sector: the Green-Yellow Fund, which is focused on university-business interaction, and the Infrastructure Fund, the aim of which is to improve the infrastructure of ICTs.
- 40 FNDCT resources are mobilized by FINEP and the National Council for Scientific and Technological Research (CNPq), both of which operate as funding agencies. FINEP also acts as the executive secretariat for FNDCT, dealing with administration, budget, finance and accounting.
- 41 FINEP. *O que são os fundos setoriais*.
- 42 BNDES. *Estatísticas Operacionais do Sistema BNDES*.
- 43 BNDES. *Formas de apoio*. Available at: www.bndes.gov.br/wps/portal/site/home/financiamento/guia/Formas-de-Apoio.

- 44 PLANALTO (2025). NIB ganha mais R\$ 41 bilhões e chega a R\$548 bi de financiamentos até 2026.
- 45 MDIC (2024). NIB ganha mais crédito e novos parceiros. Investimentos públicos e privados para o Complexo Econômico-Industrial da Saúde chegam a R\$ 57,4 bi.
- 46 INPI has agreements with the National Forum of Innovation and Technology Transfer Managers (FORTEC) on expanding use of the IP system and technology transfer management by companies and ICTs, training for INPI staff in technology transfer (based on national strategies to strengthen industry), the joint development of a project to build IP and technology transfer into human resources training structures, the promotion of R&D&I to strengthen industry, and innovation policy evaluation processes.
- 47 Of the 50 largest resident applicants in 2023, 34 were ICTs applying for patents and 36 for software protection (INPI, 2024).
- 48 State-run *fundações de amparo à pesquisa* (FAPs) fund scientific research, innovation and technological development. They provide grants, scholarships and financial support to researchers, universities and institutions, playing a key role in advancing the science and technology sector. Each Brazilian state has its own FAP.
- 49 Available at: www.gov.br/inpi/pt-br/governanca/planejamento-estrategico/plano-de-acao/2024/pa2024.pdf.
- 50 The INPI-CONFAP agreement aims to improve innovation financing and its interface with IP. All those interested in participating in the funding calls are obliged to have taken part in IP training activities. In addition, FAP staff (Research Support Foundations) should be equipped with the necessary knowledge and skills to integrate IP into the innovation financing process, with the training provided by INPI, helping them better assess and utilize IP in funding decisions.
- 51 The INPI-FINEP agreement refers to the need to include a clause on IP in financing instruments. INPI also works with the FINEP IP program through its IP courses.
- 52 The Innovation Act allows ICTs to share ownership of IP with researchers, private companies and other partners.
- 53 MCTI (2025). EMBRAPPII apresenta números ao MCTI e mostra o alinhamento com a Nova Indústria Brasil.
- 54 SEBRAE. Micro e pequenas empresas geram 27% do PIB do Brasil. Available at: <https://sebrae.com.br/sites/PortalSebrae/ufs/mt/noticias/micro-e-pequenas-empresas-geram-27-do-pib-do-brasil,ad0fc70646467410VgnVCM2000003c74010aRCRD>.
- 55 Abstartups and Deloitte (2024). Mapeamento do Ecosistema Brasileiro de Startups.
- 56 Agência SEBRAE de Notícias (August 2024). Parceria inédita promove indicações geográficas e valorização de produtos regionais.
- 57 FINEP also has other programs for startups, such as Centelha, Mulheres Inovadoras and Espaço Finep, in addition to its funding calls. In particular, FINEP has allocated a total of up to R\$44 million, including resources from other programs, for automotive startups. For an overview of FINEP programs, see FINEP 2030, available at: www.finep.gov.br/apoio-e-financiamento-externa/programas-e-linhas/finep-rota-2030. Another initiative for startups is InovAtiva Brasil, run by MDIC with the involvement of INPI. It includes training and mentoring for entrepreneurs in the early stages of development. By offering resources and connecting companies with investors, accelerators and larger companies, it strengthens the innovation ecosystem and nurtures the development of new technologies.

- 58 The latest information can be found at: www.finep.gov.br/chamadas-publicas/chamadapublica/687.
- 59 The analysis is qualitative and does not include a specific valuation of the IP assets.
- 60 For more information, see www.cartaobndes.gov.br/cartaobndes.
- 61 Interviews conducted by the consultancy for this report.
- 62 Ibid.
- 63 Ibid.
- 64 Ibid.
- 65 BNDES (2024). Fontes de recursos. Available at: ri.bndes.gov.br/informacoes-financeiras/fontes-de-recursos/.
- 66 Act No. 11.196 of 2005.
- 67 Suzano S. A. Report 2019.
- 68 Cunha e Melo, M. and de Abreu, J. (August 2023). Open Finance Brazil: the roadblocks ahead. *Labrys Frontier Series*.
- 69 The main quantitative methods are: (i) the cost approach, which calculates the replacement cost (the cost of acquiring, producing or developing a similar asset); (ii) the income approach, which is calculated on the basis of estimated earnings throughout the protection period; and (iii) the market approach, which uses comparable transactions in terms of the IP negotiated. Those approaches can be refined and combined, depending on what data are available about the asset concerned. Some studies indicate that alternative methods, which consider the characteristics of the asset and the TRL, are more effective than traditional approaches. They include discounted cash flow, especially for specific patents. For academic patents, key indicators can improve IP asset management, offering a framework to assess their market potential.
- 70 Tukoff-Guimarães, Y.B., *et al.* (2014). Valoração de patentes: O caso do núcleo de inovação tecnológica de uma instituição de pesquisa brasileira. *Exacta*. São Paulo, Vol. 12, No. 4, pp. 529-547.
- 71 Cavalcanti, J.M.M. *et al.* (2019). Do intangible assets matter to financial analysts in the Brazilian stock market? *Revista Brasileira de Gestão de Negócios*. São Paulo, Vol. 21, No. 3, pp. 606-621.
- 72 Pacheco, J., Rover, S. and Vicente, E.F.R. (2019). Value relevance do nível de evidenciação do ativo intangível nas companhias de capital aberto brasileiras. *Revista Contemporânea de Contabilidade*. Universidade Federal de Santa Catarina, Florianópolis, Vol. 15, No. 37, pp. 178-195.
- 73 ISO 56005:2020. Innovation management – Tools and methods for intellectual property management – Guidance.
- 74 INPI (2024). Valoração de Ativos de Propriedade Intelectual: aplicação prática em processos de negociação.
- 75 Dittmer, S. *et al.* (eds.) (2019) Handbook on Valuation of Intellectual Property Assets. ICC.
- 76 Quintella, C.M., *et al.* (2019) Valoração de ativos de propriedade intelectual. EMBRAPA.
- 77 <https://revista.ibict.br/p2p/article/view/6333/5994>

- 78 Heller, D., Leitzinger, L., and Walz, U. (May 2024). Intellectual property as business loan collateral: a taxonomy of institutional and economic determinants. *GRUR International*, Vol. 73, Issue 5, pp. 379–392.
- 79 In 2023, Brazil rose five positions to rank 49th out of 132 countries in the GII. That year it also rose in GDP rankings to 9th place. Nonetheless, research conducted with stakeholders indicates that the innovation system is still underperforming and not keeping pace with the country's economic position.
- 80 Public banks offer lower interest rates, but in return, they require collateral that is secure, reliable, legally enforceable, cost-effective to hold, operationally easy to manage, and easy to liquidate.
- 81 Guarantee mechanisms are used in various sectors to encourage lending in high-risk areas.
- 82 The fiduciary transfer (*alienação fiduciária*) is a common legal instrument in Brazil used for various types of assets, including real estate and movable goods. It provides strong legal protection to creditors. A fiduciary transfer involves transferring legal ownership of an asset to a trustee (in this case, the guarantee fund), while the borrower retains beneficial use.
- 83 Dantas, A. Interview conducted by Pris Software. Pris, December 21, 2022.
- 84 Ibid.
- 85 Sectoral funds are instruments under the responsibility of FNDCT that allow the participation of private capital to boost ST&I. More information is available at www.finep.gov.br/a-finep-externo/fndct/estrutura-orcamentaria/o-que-sao-os-fundos-setoriais.
- 86 See the ICC Handbook on Valuation of Intellectual Property Assets.
- 87 Paschoini, A.P.B. (2024). A contribuição da propriedade intelectual como meio de recuperação no âmbito da Lei 11.101/2005: Análise de casos de recuperações judiciais. Masters dissertation, Universidade de São Paulo, São Paulo.
- 88 Coelho, J. (June 2024). Spin-off da UFMG é adquirida pelo Grupo Bradesco. UFMG.
- 89 Fundepar (June 2024). Kunumi é vendida ao Grupo Bradesco e consolida caso de sucesso por meio de parceria entre a spin-off e a UFMG.

