

In the heart of the global economic system: the protection of intellectual property rights

Introduction

On hungerexplained.org, we have illustrated on several occasions the deleterious consequences of a concentration of wealth in a few hands:

- The related rapid financialization of food systems, which is an obstacle to their transition towards more sustainability, as the increasing weight of financial actors spreads typical financial values (priority to immediate profits at the expense of long-term considerations such as productive investments, sustainable practices, job security) and reinforces the industrial agrifood model [\[read\]](#).
- Growing economic inequalities and exclusion, that create food inequalities resulting in malnutrition, including both undernourishment and unbalanced diets causing overweight and obesity [\[read\]](#).
- Income inequalities that impact on the level of greenhouse gas emissions (the rich emit more GHGs than the poor) and on vulnerability to the consequences of climate change (the poor are more exposed) [\[read\]](#).

One of the engines of inequality and wealth concentration, set in the heart of the global economic system, is the strict protection of Intellectual Property Rights (IPR). IPRs are considered by many analysts as the main cause of the emergence of a small group of super-rich whose wealth supports an enormous economic, political and technoscientific power both through their companies [\[read\]](#) and their foundations [\[read\]](#). Indeed, IPRs appear to be the primary means of concentration of economic activities in a few dominating super-corporations [\[read\]](#).

The generalized and strict enforcement of IPR is central to the process of imposition of the liberal economic model, in which the creation of the World Trade Organization (WTO), on 1 January 1995 was a major milestone [\[read\]](#).

This creation followed the signature, on 15 April 1994, of the Marrakesh Agreement that resulted from the 8-year-long Uruguay Round negotiations held in the framework of the General Agreement on Tariffs and Trade (GATT). The 1994 Agreement included, *inter alia*, an [agreement on agriculture](#) (AOA), an agreement on [sanitary and phytosanitary measures](#) (SPS) and an agreement on [trade-related aspects of intellectual property rights](#) (TRIPS). The concept of intellectual property is, however, much older and is thought to date back to 13th-century Venice [\[read\]](#).

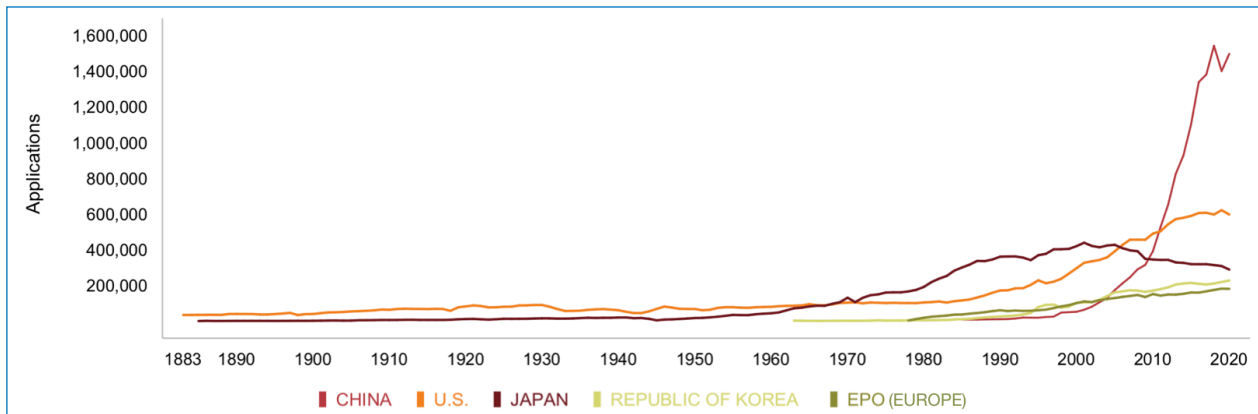
The boom of intellectual property instruments

IPRs pertain to the private ownership of knowledge and reputational assets, says the World Intellectual Property Organization (WIPO). The TRIPS agreement covers various

instruments of ownership, including trademarks, geographical indications, industrial designs, patents, copyrights, trade secrets or layout designs of integrated circuits.

According to data published by WIPO, the use of these instruments has been continuously growing over time, particularly since the early 1980s, Asia being currently the region with most patent applications (see **Figure 1**). In recent years, patent applications increased from around 1.8 million in 2006 to approximately 3 million in 2020.

Figure 1 - Trend in patent applications of the top five patent offices (1883-2020)

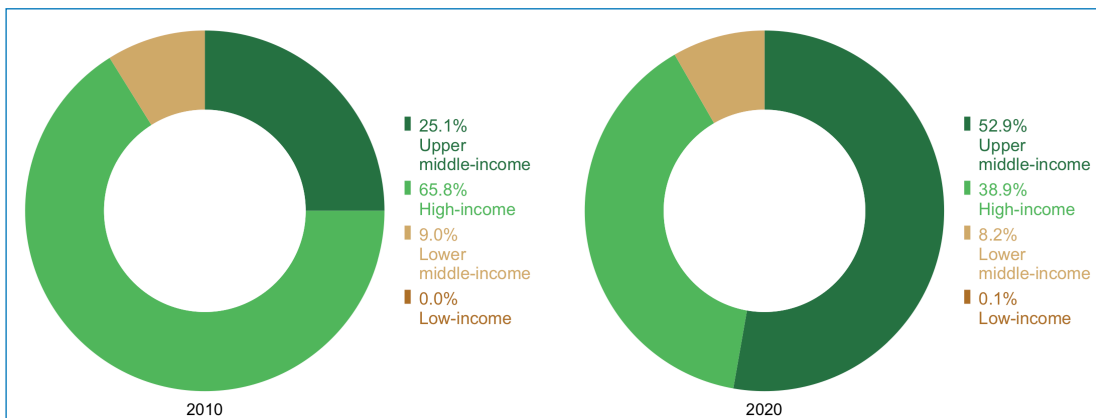


Source: [WIPO, 2021](#).

Unsurprisingly, the fastest growth of the number of patent applications is observed in IT (12% annual growth between 2009 and 2019), but numbers also increased notably in areas linked to food systems like biotechnology (6% per year), food chemistry (7.5% per year) and environmental technology (10% per year) [\[read\]](#).

Regarding plant variety applications, their number grew from around 12,500 in 2006 to more than 20,000 in 2020, with China alone making more than 8,000 applications. While high-income countries dominated in 2010, upper middle-income countries made more than 50% of the applications by 2020 (Figure 2).

Figure 2 - Share of plant variety applications for different income levels groups of countries in 2010 and 2020



Source: [WIPO, 2021](#).

While the actual number of titles issued grew from about 10,000 in 2006 to around 12,000 in 2020, over the same period, the total number of plant varieties in force doubled to reach approximately 140,000.

This evolution illustrates an in-depth change occurring in the global economy.

In the past, the risk for research and development (R&D) was mostly taken by public organizations, i.e. public research centres, and their cost was born by the state and society as a whole irrespective of whether they succeeded or not in making findings leading to financial gains.

With time, research activities undertaken by private firms developed. IPR protection was an important policy for boosting this change [\[read\]](#). Its objective was to balance the risk run by private researchers by some form of assurance of making profits in the future, with the view to persuade private firms to engage in R&D work with confidence and invest their resources in innovation. The TRIPS agreement was precisely designed for this purpose.

TRIPS objectives

The text of the TRIPS agreement specifies that “The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations”. (Article 7)

In particular, it aims at dealing with international trade of counterfeit goods.

It is not a first attempt to tackle this issue and it follows up on a series of prior conventions (e.g. the Paris Convention for the Protection of Industrial Property, 1967).

In practice, protecting IPRs amounts to provide to their owner a temporary¹ monopoly of use. e.g. the power to control ideas generated and how they and related products that embody them, are being used by others.

Like for all monopolies, this makes it possible for the holder to charge a price that has no relation with the actual cost of producing the good, thus creating a rent that will contribute to wealth accumulation. The monopoly is seen as a protection against imitation, costs of imitation being lower than the costs of innovation [\[read\]](#), and an incentive for the owner to further invest in applying the innovation or in developing further innovations.

As a result, it is no surprise to find that digital platforms that deal with knowledge make up a large part of the group of the biggest global corporations. “As of February 2018, seven of the ten biggest firms by market capitalization were tech companies. These were, in descending order: Apple, Alphabet, Microsoft, Amazon, Facebook, Tencent, and Alibaba” [\[read\]](#).

¹ This monopoly can sometimes be extended in time (for example, the composition of Coca-Cola drink remains a secret after several decades and the original 1928 Mickey Mouse version has just been placed in the public domain!) and it may be extended in scope to prevent others from even using anything that resembles a protected trademark, as is the case with the ongoing attempt by Apple to hold rights on any image of a real apple [\[read\]](#).

IPRs and privatization of research and development (R&D)

In fact, IPRs have become an intrinsic feature for a market economy where R&D is increasingly in the hands of private operators and where knowledge is commodified [[read pp. 3-4](#)]. Its importance rests on the opinion that technological progress is the prime determinant of long-run economic growth.

By limiting the risks of undertaking research, IPR protection is expected to encourage R&D [[read](#)], if not economic growth.

In reality, however, the protection of IPR skews the direction of R&D activities into those areas where findings that can be easily privatized, rather than those that are easily shared [[read p. 5](#)], thus leading probably to a sub-optimal mix of innovations for society as a whole.



Consequences of IPR protection: concentration and inequalities

The protection of IPR has deeply transformed the global economic system by leading to the emergence of a “tripartite structure composed of high profit volume firms with monopolies based on intellectual property rights (IPRs), physical capital-intensive firms protected by an investment barrier to entry, and low profit volume labor-intensive firms” [[read](#)].

Some researchers only consider two main categories of corporations emerging from this ongoing change: “those that control production, distribution and consumption by controlling innovation processes and a myriad of organizations whose best alternative is to subordinate” [[read](#)].

This is being made possible through the emergence of what has been called by some analysts, the “Intellectual Monopoly Capitalism” characterized by “hierarchical relations among firms and between capital and labour, because the capital of some firms includes the exclusive ownership of much of the knowledge used in production” [[read](#)].

This exclusive ownership is being protected by governments with the effect of locking in the monopoly power from intangible asset creation (e.g. computerized information, technological knowhow, the design of new products resulting from biotechnology, brands

and trademarks). This allows owners of these assets to capture potentially massive rents, including “information rents’ arising from the presence of scale economies and network externalities² associated with the production of intangible assets” [\[read\]](#).

At hungerexplained.org, we have already discussed how the ownership of information is the basis of control over global value chains [\[read pp. 3-6\]](#), and how commodification of information is concentrating power in the hands of a few digital players making huge profits [\[read pp. 4 to 7\]](#).

In particular, possibilities for corporations of finding ways to escape taxation (e.g. through transfers of profits to branches located in countries with less taxation [\[read p. 2\]](#)) and place hundreds of billions in offshore accounts [\[read\]](#), contributed to an unprecedented level of capital accumulation.

Appropriation of power and wealth by a minority

More concentration of power and profits leads to greater inequality, with high salaries being paid in the most innovative firms, and low salaries being the lot of those who actually produce the good embodying the knowledge generated by others.

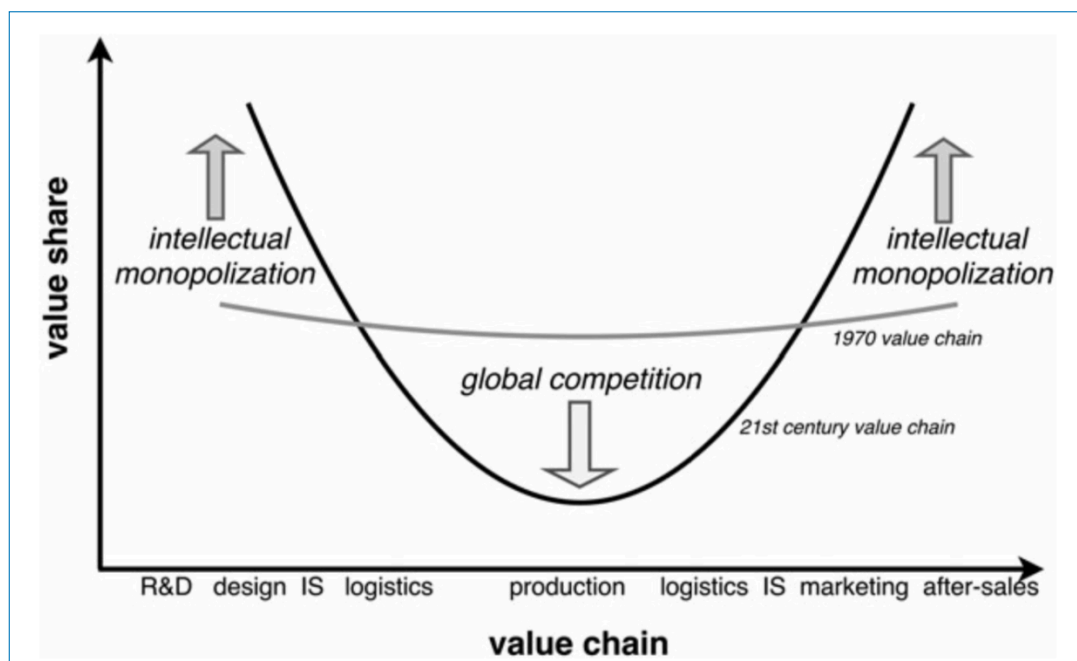
This is well illustrated by the structure of the price of an Apple iPhone back in 2011, where Apple, the lead corporation in the value chain who detains the IPRs for the intangible assets required to produce this phone, makes profits representing as much as 58.5% of the price paid by the final user, while profits of actual manufacturing firms (mostly abroad) only amount to 13.5%, and material inputs and labour eat up only 27.2% of the final price [\[read p. 6\]](#). Similar proportions can be found in areas as diverse as the clothing industry or the provision of digital services.

The increasing importance and role of intangibles protected by IPR have been simultaneous with the development of global value chains, as demonstrated by numerous studies [\[read p. 9\]](#).

From year 2000 onwards, monopolies based on concentration of knowledge in a few hands have favoured growing profit accumulation at the distribution stage for buyer-driven value chains and in activities before production for producer-driven chains [\[read\]](#), limiting possibilities to capture value at the central assembling-executing segment of the product formation where global competition is raging (**Figure 3**).

² Network externalities occur when the value of a good to its user increases as and when more people use it (or use compatible goods) in the same network, e.g. more users means greater trust by others who are then willing to use it too.

Figure 3: Intellectual monopoly and global competition in the “smile curve”



Source: [Durand and Milberg, 2020](#).

As shown in Figures 1 and 2, the holding of IPRs is largely dominated by rich-country corporations (and by China in recent years). To impose their domination, corporations owning knowledge do not need any more to invest directly in executing companies in low- and middle-income countries. Rather, it is sufficient for those multinationals to partner with them, thus avoiding to put at risk part of their capital.

Easily offshored production activities in faraway places, including where wages are low, as global value chain management is made easier and cheaper by booming information technology, as it facilitates the handling and analysis of the huge amount of information and data required.

Without such technology, such gathering and analysis would be impossible or extremely costly. In addition, data centralization enhances innovation capabilities, thus further strengthening the domination by lead corporations. Moreover, when one company has the capacity to combine all the information on a particular chain, the information appreciates in value compared to when bits of information on various stages are analysed separately, and this puts the company at an advantage.

This is a major incentive for trying to achieve a full vertical control over chains. In the seed sector, for example, the process of control and concentration has been very impressive [\[read\]](#). In part, integration is also a way of preventing the dissipation to competitors of the knowledge capital accumulated by a given firm.

Some more consequences

On innovation and research

Besides generating considerable inequalities, high concentration of power is a danger for the effective and efficient operation of the sector and its transition towards more

sustainability, particularly as it is associated with greater financialization [read [here](#) and [here](#)].

IPRs are also central in the development of AgTech and BigTech firms. The advent of these firms tends to disempower farmers and increase power asymmetries between technology and data owners (e.g. BigTech, AgTech and agribusiness firms) and technology users and data producers (e.g. farmers, agricultural workers, food processors) [read [here](#) and [here pp. 4-7](#)].

IPRs may encourage investment in R&D for private firms who can capture benefits by exploiting them, but they also widen the gap between technology developers and possible users leading to the production of technologies that are not necessarily adapted to needs from a social, economic or environmental perspective. These technologies might not, finally, be adopted by the great mass of producers [[read](#)].

The importance given to safeguarding IPR may also become a constraint to collaboration within research and technology development. The results of innovative activities should normally be added to society's stock of knowledge, upon which subsequent innovations can then be based [[read p. 9](#)]. However, when these results are not accessible to other inventors, it reduces possibilities of further innovations. Indeed, one may wonder how effective collaboration can occur when researchers are unable to share technological details and their prototypes with collaborators and other possible end users. This can grow into a major issue, particularly when, for economic reasons, capturing of IPRs becomes a central priority for researchers and turns into a likely cause of disruption and tension in what should have been cooperative relationships. This is especially the case when university researchers and staff from private corporations are involved [[read](#)]. In that case, public-private partnerships can change into an opportunity for predation of public-funded research.

On economic structure and inequality

Intellectual monopolies affect development and wealth distribution by

- Creating an uneven geographical distribution of intangibles that are heavily concentrated in rich countries relatively to tangible assets. This trend has led to growing differences among countries, particularly since the start of the century.
- Creating a risk of stagnation, as concentration of profits and financialization lead often to increasing share of profits being distributed to shareholders, rather than being reinvested.
- Boosting tax avoidance in global value chains, because of lack of harmonization of tax regimes. It is estimated that as much as 40% of profits are being transferred to low-tax countries, frequently through transfer pricing of different branches of a same multinational corporation [[read](#)].

Other consequences include centralization of individual data by digital platforms, mergers and acquisition backed by assetization of knowledge, data extraction and innovation-by-capture [[read](#)].

Similarly, with the priority given to IPR, a large part of existing knowledge becomes inaccessible unless you can pay for it. This penalizes the poor and reinforces inequalities.

In many respects, innovation has turned into a smokescreen behind which corporations collect super profits through short-term gains and market capitalization.

On economic growth

Although much has been written on the impact of the enforcement of IPRs on innovation and growth, there is no clear consensus that this impact was actually positive [\[read\]](#). In the 1990s, several studies found that IPR protection had a positive impact mostly in rich countries where the capacity exists to enforce them effectively, even though this growth may be mainly indirectly and a consequence of “physical capital investment and R&D in the most advanced countries” [\[read\]](#).

For poor countries, access to innovation can only be granted through trade or foreign investment, two situations which are generally not favourable to them. But transfer of technology is also a risk for innovating corporations when they decide to operate in countries where IPR protection is weak, as they are then exposed to the risk of imitation and technology expropriation. For example, in the case of China in the early years 2000, researchers have documented that former partner firms or employees of foreign corporations ended up opening their own companies producing imitations and infringing the trademarks and patents.

Many believe, however, that the benefits of the additional creativity and innovation outweigh the costs imposed on society by intellectual property rights [\[read here\]](#), for instance], but their perspective is mainly economic and lacks social or environmental considerations.

Yet others think that too much and too strict a protection may sometimes compromise the spread of new ideas. More generally, this protection, according to the UN Industrial Development Organization (UNIDO), may increase the technological gap between rich and poor countries [\[read\]](#), as innovation is much more important in the former than in the latter (see Figures 1 and 2).

Conclusion

The protection of intellectual property rights is at the heart of the global economic system, and it has benefitted from a legal framework through the adoption of TRIPS by the WTO member countries at the time of its creation in 1995.

Since the 1980s, the explosion of legal instruments for protecting intellectual property rights, whose objective was to contribute to innovation and growth, boosted the growing economic and financial importance of intangible assets (information, technological knowhow, data and other information-intensive products).

The ownership of these intangible assets, to which protection gave a monopolistic nature, made possible the progressive takeover of global value chains by a small number of dominating megafirms resulting from a spectacular trend of merger/acquisitions and an unprecedented accumulation of wealth in the hands of a small number of firms and people, concomitant with a concentration of economic, technoscientific and political power that had never been seen before in history.

While this radical transformation of the economy contributed to the development of innovation - mainly private - and, perhaps, to economic growth, it was characterized by

greater inequality among countries and people. This evolution has also stimulated financialization of the global economy that gives priority to immediate profits at the expense of long-term considerations, making the transition towards sustainability more difficult.

It is quite clear from this review that it is urgent to revisit the matter of intellectual property so as to bring more fluidity to the flow of innovation, to ensure that innovation is more guided by general interest - and particularly that of the most disadvantaged groups of society - rather than by vested interests, and that it serves a more sustainable, less inegalitarian and more environment-friendly economy.

[Materne Maetz](#)
(January 2024)

To know more:

- Burch, K.A., Nafus, D., Legun, K. et al., [Intellectual property meets transdisciplinary co-design: prioritizing responsiveness in the production of new AgTech through located response-ability](#), *Agric Hum Values* 40, 455–474, 2023.
- Strömberg, A. and P, Howard, [Recent Changes in the Global Seed Industry and Digital Agriculture Industries](#), 2023.
- Schwartz, H. M., [Global secular stagnation and the rise of intellectual property monopoly](#), *Review of International Political Economy*, 29:5, 1448-1476, 2022.
- WIPO, [World Intellectual Property Indicators 2021](#), Geneva: World Intellectual Property Organization, 2021.
- Rikap, C., [Capitalism, Power and Innovation: Intellectual Monopoly Capitalism Uncovered](#), Routledge, 2021.
- Durand C. and W. Milberg, [Intellectual monopoly in global value chains](#), *Review of International Political Economy*, 27:2, 404-429, 2020.
- Teixeira da Silva, D. S., [The link between the Intellectual Property Rights, Innovation and Growth: A Meta-Analysis](#), Faculdade de Economia, Universidade do Porto, 2018.
- WTO, [Agreement on Trade-Related Aspects of Intellectual Property Rights \(as amended on 23 January 2017\)](#), 2017.
- Pagano, U., [The crisis of intellectual monopoly capitalism](#), *Cambridge Journal of Economics*, 2014.
- Falvey, R., N. Foster and O. Memedovic, [The Role of Intellectual Property Rights in Technology Transfer and Economic Growth: Theory and Evidence](#), 2006.
- Park, W., [Impact of the International Patent System on Productivity and Technology Diffusion](#), Fraser Institute, 1999.

Selection of articles on hungerexplained.org related to this topic:

- Opinions: [Reflections on food, power, poverty and resilience in the face of global catastrophic risks](#) by Geoff Tansey, 2023.
- [Inequality in food systems - Is it realistic to believe that food systems could become more equal in an unequal society?](#) 2023.
- [The “food and agricultural transition” is ongoing Nine changes tell us to what kind of world it is leading us](#), 2023.
- [Private economic power in food systems and its new forms](#), 2022.

- [Income inequality impacts on the level of greenhouse gas emissions and on vulnerability to the consequences of climate change](#), 2020.
- [How tax evasion reinforces financial power, weakens public institutions and policies and perpetuates dependence](#), 2017.