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Searching for Right Level of Intellectual Property Rights Protection

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Abstract

Intellectual property rights (IPRs) concern ideas that are translated into intangible assets and that are protected for a limited or unlimited period of time from unauthorized commercial exploitation. IPRs is critical for fostering innovation. Without protection of ideas, business, individuals and countries would not reap the full benefits of their inventions and would focus less on research and development. But protection can't be too strong. Intellectual (legal) monopoly which is created under IPRs discourages investments, hampers innovations and slowdowns the knowledge diffusion. IPRs are necessary to foster innovation, but the disagreement is over where the line should be drawn. The dilemma is that without a legal monopoly not enough information will be produced but with the legal monopoly too little of the information will be used. The paper shows the current state of knowledge in this debate.

Keywords: intellectual property rights protection, free trade agreements, TTIP

1. INTRODUCTION

Innovation has always been at the heart of the technological change and therefore the development and growth. In an era of rapidly increasing globalization, protection of the inventions and technologies is more important than ever.

The World Intellectual Property Organization (WIPO) defines intellectual property (IP) as creations of the mind, such as inventions, literary and artistic works, designs, and symbols, names and images used in commerce. This property can be protected on the national level by each country's law dedicated to: patents, copyrights, licensing and trademark and by international conventions on international level. Protection of IP enable people to earn recognition or financial benefit from what they invent or create.

Intellectual property rights (IPRs) have been designed to benefit society by providing incentives to introduce new inventions and creations. Therefore, their purpose is not the exclusive benefit of individuals and corporations but also of the public community at large.

Nowadays scientists, scholars, politicians and entrepreneurs understand the role and importance of IPRs protections but debate over the right level of its protection. The main question is: What level of IPR protection would bring benefits to all participants? Also the second question quickly

occurs: What level of IPR protection would be appropriate for the development needs of the developed and developing countries?

Contemporary world is infinitely more complex and complicated than in 18th century. Even if nowadays specific intellectual property rights are recognized round the world, we face differing views on stakeholders' responsibilities in protecting and exercising these rights. The awareness of the importance of IP is not universal. Additionally potential benefits associated with the violation of intellectual property are significant. Therefore in today's interconnected electronic age, preventing IP theft faces many challenges and obstacles. Goods can easily move across the globe at the speed of light and factories can be quickly adapted to replicate commercially successful goods.

In last decades we could observe the global shift towards stronger IP protection. But has the global shift to stronger intellectual property rights been associated only with positive effects? Even today, many years after the ratification of the TRIPs Agreement¹, opinions about the impact of stronger IPR are varied and continue to reflect issues that arose when TRIPs was debated.

The paper is divided into some parts. In the first part the main arguments for strong IPRs are shortly described. Then in the second part the main disadvantages are presented. At last, in the conclusions the third hypothesis is discussed. It shows the U-shaped relation between the strength of IPRs protection and innovation.

2. THE ARGUMENTS FOR STRONG IPRS PROTECTION

The main benefit claimed for strong IPR protection is that by allowing innovators to appropriate a share of the benefits of their creative activities, R&D is encouraged, which leads to innovation and higher long-run growth.

Economists and scholars recognize several channels through which IPRS could stimulate economic development and growth. The most obvious channel is connected with innovations, technological change and technology diffusion. But also IPRs can influence economic growth through trade channel, foreign investment channel and licensing channel [Falvey, 2006].

The positive and uniform relation between innovation and strong IPRs protection is based on an idea of standard market-failure and positive externalities argument. Knowledge is understood as codified information which is non-rival, hardly excludable and easily transferred. Knowledge is treated (to a large extent) as a public good, which means that it will be under-produced and will receive insufficient investment. Intellectual property rights are the only effective way of appropriate returns to knowledge and thus of providing ex-ante incentives to produce knowledge. Thanks to IPRs protection the artificial scarcity is created to amend non rivalry and non

¹ The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) was established during the Uruguay Round (1986-1994) of trade negotiations in order to strengthen the international IPR regime. It is the first comprehensive and global set of rules covering IPR protection. TRIPS specifies minimum standards of protection, the areas covered are: copyrights and related rights, trademarks, geographical indications, industrial designs, patents, the layout designs of integrated circuits and undisclosed information including trade secrets and test data.

excludability in such a way that an appropriate degree of appropriability of returns from R&D investments is set².

In the modern literature on economic growth, technological change is perceived as the prime determinant of long-run growth. This technological change arises from the activities of different economic units carried out in order to profit from the introduction of new products [Romer, 1990; Grossman and Helpman, 1994] or the improvement of existing ones [Grossman and Helpman, 1991; Aghion and Howitt, 1992]. Economic units invest in R&D in the expectation of profits from the resulting inventions. But also another value added is created in this process. Besides creating new products, innovative activity adds to society's stock of knowledge, upon which subsequent innovations are based. This process is assisted where the information that IPRs protect is made available to other potential inventors. The global rate of growth then depends upon the rate of innovation and the stock of knowledge, and IPR protection can increase growth by encouraging both of them [Falvey R., 2006, p.9].

Many countries in strengthening IPRS regimes, either unilaterally or through adherence to TRIPS, hope to attract greater inflows of technology. As it was mentioned earlier there are three interdependent channels through which technology can be transferred across borders. These channels are: international trade in goods, foreign direct investment, and contractual licensing of technologies and trademarks to unaffiliated firms, subsidiaries, and joint ventures. Economics theory finds that technology transfers through each channel depend in part on local protection of IPRs, albeit in complex and subtle ways [Maskus, 1998].

It is widely recognized by economists and scholars that imports of goods and services could transfer and diffuse technology. Imports of capital goods and technical inputs directly reduce production costs and raise productivity. The extent of this benefit would depend on the technological content of imports. Thus, an important question is whether IPRs affect such trade flows. Maskus and Penubarti (1995) point out that variable IPRs across countries could influence imports in a number of ways. The essential tradeoff from strengthening patents is between a contraction of trade as protected firms exercise stronger market power and expansion of trade because such firms experience higher demand for their products [Ibid, p. 227-248]. The anticipated impacts on trade volume depend on the extent of patent revisions, market size, and the degree of the imitation threat that would be relaxed by adherence to TRIPS.

The second main channel of technology transfer is strictly connected with FDI flows. Over the past decades, there has been a growing scholarly literature on the relationship between IPRs and FDI inflows. The main research was conducted by Mansfield in 1994. He finds out that licensing is viewed as insecure compared with FDI in the high-technology sectors. At low protection levels internalization decisions encourage FDI as patents get stronger. However, as protection exceeds some level there emerges a substitution effect favoring licensing over investment. In brief, there is a negative elasticity of FDI with respect to patent rights in high-income economies but a strongly positive elasticity among developing economies [Maskus, 1998]. It means that stronger IPRs can have potentially significant and positive impacts on the transfer of technology to

² The problem then becomes that of balancing out the detrimental effect of deadweight loss implied by a legally enforced monopoly and the beneficial effect of knowledge dissemination and investments in R & D which influence economic growth and development [Dosi, Marengo, Pasquali, 2007]

developing countries through each of these channels. This result is especially pertinent in middle-income developing countries with significant capabilities to imitations. The results are weaker for the least developed economies, where the impacts would be positive but small.

On the other hand, case studies conducted in developing countries indicate that IPRs are considered very important for innovation (Sherwood, 1990). This suggests that the marginal value of patent rights (or IPRs) is higher in developing markets (where legal and other institutions are not as well developed and where, as a result, firms have few alternative means of appropriation, if any).

As far as econometric evidence is concerned, two studies show that patent rights contribute to economic growth, but they emphasize different mechanisms. Gould and Gruben (1996) focus on how this effect depends on the degree of countries openness, while Park and Ginarte (1997) emphasize that patent rights stimulate factor accumulation (human capital, R&D capital, and physical capital) which, in turn, directly influences economic growth. In a related study, Siwek (2000) examines the importance of copyright industries for U.S. economic growth. Rather than using indexes of copyright protection, he separates groups of IP-based industries (computer software, motion pictures, music, publications, etc.) from traditional manufacturing industries³. From an economic standpoint, IPRs carry a tension between opportunity and appropriability (Arrow, 1962; Nordhaus, 1969). Strengthening IPRs regimes enable firms to internalize part of the spillovers that stem from R&D activities, and hence provide incentives to engage in R&D even more intensively (Samariego, 2012). Similarly, stronger IPRs limit the ability of agents to access to knowledge spillovers – i.e. through imitating competitors' products – and could potentially lead to wasteful R&D duplication (Murray and Stern, 2007). Conversely, stronger IPRs should induce firms to disclose the outcome of their R&D activities, and hence increase the pool of knowledge available for third parties to build upon.

Theoretical studies conducted by Diwan and Rodrik (1991) and Taylor (1994) reveal that stronger IPRs may enhance global welfare and productivity. Nowadays large number of theoretical studies on IPRs actually deal with patent rights and inventive activity but also some research connected with different forms of IP are interesting. For example Landes and Posner (1987, 1989) provide a theoretical analysis of non-patent IPRs, such as trademarks and copyright. Essentially, trade-mark protection encourages economic efficiency by reducing search costs for consumers because they allow potential buyers to recognize quality products through symbols or names. Copyright over original and derivative works also strengthens creativity by increasing the odds of appropriating the benefits of the creations. Copyright can also complete other rights, such as patent rights, where the ideas are not protectable but the expression is.

Over the last two decades a number of countries started to strengthen their laws in the area of IPRs, following the successful conclusion of the TRIPs Agreement (Maskus, 2000; Branstetter et al., 2011). In fact, the strength of IPRs is a key driver of economic performance in R&D based growth models (Aghion and Howitt, 1992; Eicher and Newiak, 2013; Kim et al., 2012).

³ The study finds that copyright industries account for 4.94 percent of U.S. gross domestic product (GDP) and that this share is growing fast. Copyright industries also account for 3.24 percent of all jobs and employment growth in this group is three times the national average [Park, 2005.].

3. THE ARGUMENTS AGAINST STRONG IPR PROTECTION

In general intellectual property rights protection encourages innovation by granting successful inventors temporary monopoly power over their innovations. The consequent monopoly profits provide the returns on successful investment in research and development (R&D), which must be large enough to compensate for the high share of R&D investment that is unsuccessful. Additionally intellectual property rights protection provides market power for firms and creates barriers to entry in the industry and restricts competition. Firms holding intellectual property rights may reduce production and sales generating higher monopoly prices for the consumer. So the monopoly in legal and economic sense is created. One way to avoid such economic monopoly is to guarantee such rights only temporarily. In economic literature the main opponents to IPRs protection are Boldrin and Levine (2004, 2008, 2012). They argue that there is no empirical evidence that IPRs protection serves to increase innovation and productivity.

The idea that intellectual property rights are a form of state-granted and enforced monopoly goes back to the beginning of theorizing about intellectual property. It is also still influential in intellectual property theory and policy today. Equating IP with monopoly is almost as old as IP itself. The idea structured a great deal of the debate over IP in the nineteenth century. Adam Smith believed that IP, though regrettable in principle, was a justifiable temporary monopoly. The standard model of Arrow-Debreu competitive equilibrium [Arrow, Debreu, 1954] has the fundamental assumption that technology is fixed, so innovation is ignored. Schumpeter, in "Capitalism, Socialism and Democracy" (1943), has the merit of highlighting the insufficiency of competition theory and the need to develop other theories. Schumpeter emphasizes innovation and believes that competition for innovation creates temporary monopolies. The debate is continued by Dasgupta and Stiglitz in "Uncertainty, Industrial Structure and the Speed of R & D" [Dasgupta, Stiglitz, 1980]. They try to prove that Schumpeter is wrong stating that the monopoly would be temporary claiming that monopoly power is easily perpetuated once has installed.

Nowadays the debate is still ongoing but more and more scholars disagree with the idea of intellectual monopoly created by IPRs. Intellectual property rights may give their holders monopolistic powers, depending on how they are (mis)interpreted and enforced, but there is a feasible conception of intellectual property that is not monopolistic. Stiglitz summarizes the debate over IPRs, monopolies and innovations concluding that the importance of IPRs protection has been exaggerated in last decades and the discussion over its monopoly power is useless in the context of innovation. IPRs form only one part of innovation systems and should be seen only as part of a portfolio of instruments. Stiglitz suggests to strengthen the other elements of innovation system and improve intellectual property regime to increase its benefits and reduce its costs [Stiglitz, 2014].

Another argument against strong IPRs protection is that this protection slowdowns economic growth. In theoretical study, Takalo and Kannianen (2000) find that a strengthening of patent rights delays the introduction of new technologies to the market (i.e. raises the value of waiting for the innovator). Bessen and Maskin (2000) develop a model of sequential and complementary innovation in which patent protection reduces innovation and social welfare. In an international North-South model Helpman (1993) argues that weak IPRs in the South may actually be welfare-enhancing for that region, while stronger IPRs in the South may not necessarily benefit the North. There may also be situations where stronger copyright may be adverse to economic efficiency

(those rights reduce the incentive of rivals to create, or the owner's incentive to produce new creations). Each inventor is part of creators chain. Thus, stronger protection of expressions affects subsequent generations of creators. In terms of empirical work, a survey by Levin, Klevorick, Nelson and Winter (1987) of U.S. firms finds that patent protection is not the most important means for firms to appropriate the returns to their R&D (as compared to lead time and reputation). Moreover, firms claim for patents for reasons other than to protect their innovations. They want to acquire strategic bargaining chips for licensing negotiations [Park, 2005].

Murray and Stern [2007 s.648 - 687] also oppose the strong degree of IPRs protection. They analyze the patents related to discoveries described in scientific articles and find that the number of citations of articles dropped significantly after the grant of patent protection. Also Furukawa (2007, 2010) states that stronger protection increases the share of monopolized sectors in the national economy, which negatively affects the decrease in production growth by limiting the accumulation of experience in the process of acquiring skills through practice (learning by doing), which is associated with the use of intermediate goods. This affects the decline in productivity in the sector of final goods, which leads to lower growth in demand for intermediate goods. This in turn weakens the incentives for innovation.

Bessen and Maskin (2009) assume that innovation is sequential (another innovation is based significantly on the previous) and complementary (each potential innovator takes another path of research, increasing the overall probability of achieving a given objective at any given time). In such a dynamic approach to the innovation process patent protection does not encourage innovations. It means that a single innovator and the economy as a whole can improve their well-being without the existence of IPRs protection.

In the past the main argument against strong protection of intellectual property rights was the monopoly power which was created in such process. Nowadays nobody doubts in economic efficiency, and common sense. Ideas and inventions should be protected and available for sale, just like any other commodity. But "intellectual property" means not only the right to own and sell ideas, but also the right to regulate their use. And such understanding of "monopoly power" of IPR is nowadays criticized. This regulation of future use of ideas which have change the owner creates a socially inefficient monopoly commonly called "intellectual monopoly".

4. CONCLUSIONS

The establishment of secure intellectual property rights protection is a fundamental pillar of a well functioning market economy. No economic agent exercises productive effort without the certainty of controlling its profits. But too strong protection can hamper innovations, slowdown economic growth and discourage innovators from taking risks.

The alternative hypothesis states that only above a certain minimal level, the protection of IPRs results in more sustained innovation and long term economic growth. It has gained consensus in the recent years within the field of both theoretical and empirical investigation (Bessen and Maskin, 2009; Furukawa, 2010; Gangopadhyay and Mondal, 2012). In addition, Furukawa (2010) and other authors (including Murray and Stern, 2007; and Lerner, 2009) find evidence of an inverted U-shaped relationship between strengthening of IPRs protection and innovation activities. Enhancing IPRs protection reduces innovation activities when IPRs protection is already strong. On the one side, this suggests that there should be an optimal level of IPRs protection which maximizes the innovative effort of economic units and results in accelerated

economic growth. However, on the other side it seems likely that below and above such threshold the incentive to innovate and the efficiency of the overall innovation system becomes smaller.

The inverted U-shaped relationship between innovation and IPR protection suggests that too strong as well as too weak protection hurts the incentive to innovate: rather a balanced approach is required for innovation and growth. Aghion (2005) shows the strong evidence of an inverted-U relationship between competition and innovation by using panel data. Also Koleda (2005) claims that the effect of patent novelty requirements on growth can be inverse U-shaped, which implies that tightening the IPR protection dampens economic growth for a range of stronger novelty requirements.

Nowadays scholars agree that both too strong and too weak protection hurts innovation and the growth. It means that a new, balanced approach is required for growth. This can provide insight into the role of IPRs protection in economic growth, a topic often raised in public policy discussions.

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