

**PROTECTION OF INTELLECTUAL  
PROPERTY RIGHTS IN A  
TRANSITION ECONOMY**

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**Working Paper No. 96-14  
September 1996**

# PROTECTION OF INTELLECTUAL PROPERTY RIGHTS IN A TRANSITION ECONOMY

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## Abstract

Market *perestroika* and integration into the world economy require strengthening protection of intellectual property rights (IPRs) in transition economies like Russia. This paper examines patterns and emerging trends in piracy and protection of IPRs in Russia and analyzes the economic effects of strengthening IPRs in the context of Russia's market transition. In the early 1990s, Russia brought IPR legislation up to international standards. Yet IPR enforcement remains weak, and piracy of foreign software, trademarks, audio- and videocassettes flourishes. Ineffective IPR protection stifles innovation, trade, and direct foreign investment, and may become an obstacle to Russia's future membership in the World Trade Organization.

*JEL Codes:* F1, O5, K1

*Key Words:* intellectual property rights, Russia, piracy, transition economy

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I am very grateful to Sumner La Croix, Jay Dratler Jr., James Roumasset, Denise Eby Konan, Patricia Polansky, Robert Valliant, Elena Belova, and participants of the 71st Annual International Conference of the Western Economic Association for insightful comments and suggestions.

## I. INTRODUCTION

Protection of intellectual property rights -- patents, trademarks, copyrights, etc. -- is a major instrument for fostering innovation and growth in a market economy. By granting a temporary monopoly on the commercial use of innovations, intellectual property rights allow the owners to recoup research and development expenses and to earn a return on their innovations. For that reason, protection of intellectual property rights stimulates private investment in research and development. Furthermore, intellectual property rights encourage the dissemination of technological information by making patent documentation available to the public. In general, assignment and protection of intellectual property rights are viable only if private property is recognized in a society.

During the Soviet period, Russia stifled private ownership of intellectual assets along with physical ones. The monopoly on the commercial use of innovations belonged to the state, while domestic inventors received only certificates confirming their authorship. Eventually, market reforms brought discernible changes to the protection of intellectual property rights (IPRs). In the early 1990s, Russia joined major international IPR conventions and adopted new IPR laws comparable with those in industrialized countries. Yet current enforcement of new IPR laws remains weak, and piracy of software, audio- and videocassettes, etc., is wide-spread in Russia.

As market transition continues, underlying economic forces progressively push towards strengthening domestic IPR protection. First of all, with the formation of a market economy, Russian innovators develop stakes in the strong protection of intellectual assets. To benefit from the international transfer of technologies as well as research and development cooperation, domestic firms need tight IPR protection. Likewise, foreign companies interested in trade, technology transfer, and direct foreign investment in Russia urge stronger IPR protection. Lastly, effective IPR enforcement is likely to be a condition for Russia's

membership in the World Trade Organization (WTO) which requires harmonization of IPR protection among its member countries.

During the past several decades, debate on international harmonization of IPRs exposed divergent positions of developed "North" and developing "South" countries on the issue. Being exporters of high technology industrialized countries favor strong IPR protection as a stimulus for innovation, trade, and direct foreign investment. Developing nations on the other hand, fear that strong IPRs will drive up domestic prices and hinder technology acquisition through imitation and reverse engineering, and in general slow down the development process. As a compromise, the Agreement on Trade-Related Intellectual Property Rights (TRIPS) under the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) has granted the developing countries until 2000 and the least developed countries until 2005 to strengthen domestic IPR protection in accordance with GATT provisions.

Though a useful systematization concept, the differentiation of countries into the "North" and "South" into two distinct groups of countries is problematic. Such economies, for example Russia, are difficult to classify for policy purposes because standard analytical terms designed by economists for developed and developing countries fail to fit Russia well. Like the North, Russia conducts indigenous research and development (R&D) and hence has an incentive for strong IPR protection. At the same time, like the South, low incomes encourage piracy giving Russia a case for feeble enforcement of IPRs. Additionally, Russia's R&D has been traditionally concentrated in the military industrial complex. Only in the past few years has the conversion of defense industry shifted its orientation toward civilian R&D. In this regard, effective IPR protection increasingly

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Russia submitted application to WTO in 1993.

TRIPS Agreement transition period for developing countries

becomes an important part of domestic science and technology policy aimed at promoting R&D with commercial applications. In general, designing an appropriate IPR regime for transition economies is not straightforward and should take into account specific features of such economies.

This paper focuses on the analysis of IPR protection in light of Russia's transition to a market economy. The task is to examine existing patterns of legal protection, enforcement, and infringement of IPRs in Russia. Efficiency and rent-seeking incentives, as well as economic effects of strengthening IPRs are also considered. Finally, the paper suggests future policy directions of IPR protection in Russia.

## **II. FROM AN AWARD-BASED SYSTEM TO PRIVATE PROPERTY RIGHTS**

In tsarist Russia before World War I, major types of intellectual property, such as patents, copyrights, and trademarks, received adequate protection by contemporary standards. With the Bolshevik revolution and the introduction of the "war communism" regime in 1917, Russia's participation in the international system of IPR protection abruptly came to a halt. For the next seventy years, IPR protection virtually ceased to exist. In 1919 it was replaced by a state monopoly on the use of inventions, trademarks, and other assets. Some types of intellectual property, for example, computer software, and trade secrets, received no protection at all. Inventors were given an author certificate, a.k.a., a document certifying the invention, its priority, and authorship, and occasionally an award in the form of tangible assets such as money, an apartment, a car, etc., as well as prestige and publicity (Table 1).

TABLE 1  
 Number of Applications for Protective Documents, 1940, 1950, 1960, 1970, 1980<sup>a</sup>  
 (thousand units)

Year	Number of Applications
1940	591
1950	1,241
1960	3,987
1970	4,591
1980 <sup>b</sup>	4,940

a. Data refer to the Soviet Union.

b. Annual average for the period from 1980-85.

Source: USSR State Committee on Statistics (Goskomstat), *Narodnoe khoziaistvo SSSR*, (various issues), *Finansy i statistika*: Moscow, Russia.

Although the new economic policy of 1924-31 made patents an officially recognized form of protection of inventions, patents were barely used in the Soviet Union. During the socialist period, patents accounted for about one percent of all domestic applications for protection of inventions, and were registered mainly for the purpose of external patenting and licensing. The Patent Cooperation Treaty, the European Patent Convention, and the Agreement on Mutual Recognition of Author Certificates and Other Protective Documents provided a basis for external patenting of domestic inventions. By the early 1990s, more than 18,500 domestic inventions received protection in 63 countries, including almost 70 percent in industrialized countries, 28 percent in the former socialist countries, and about two percent in developing countries (CSRS, 1992a). Between 1970 and 1990, Russia's trade in licenses substantially increased. For example, total receipts from exports of licenses went up by about 55 times from 1970 to 1990, while the total number of licenses sold reached 4,582 in the end of 1990. In the 1980s, about 65 percent of licenses were exported to the former socialist

countries, percent to industrialized countries, and percent to developing countries (CSRS 1992b).

Whether such an award-based system of protection of inventions is more efficient than protection of private intellectual property rights (IPRs) is debatable. On the one hand, an award-based system has an important efficiency advantage over the private protection of IPRs, in that the former separates reward for invention from charge to information (Arrow 1962), thus offsetting R&D distortions associated with the private provision of its own good knowledge. An award-based system moves the economy toward social optimum.

Nonetheless, inefficiencies result from the government's allocation of resources to R&D. Under an award-based system, the government picks the winners in R&D in a direction dictated by the bureaucracy, and such picking is generally inefficient (Demsetz 1966). Moreover, government-financed distortions such as taxation in a market economy or subsidization of industry under a centralized pricing system in a socialist economy. Also, an award may reflect the social value of invention due to the bureaucrat's subjectivity. In contrast, IPR protection based on market pricing, usually through an efficient mechanism of allocation, is a more practical practice. All in all, in an economy with limited government intervention, the effectiveness of an award-based system is problematic, reinforcing the case for IPR protection.

With the advent of *perestroika* in the mid-1980s, Russia started reforming its centrally planned economy. At the beginning of market transition, private property rights in public assets, intellectual property was no exception. During 1992, the Russian government strengthened IPR legislation up to international legal standards by adopting laws on trademarks, appellations of origin, patents, copyrights and trade secrets. Chemical, pharmaceutical substances, semiconductor chips, and computer software also received IPR protection.

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Arguments by Demsetz in favor of market competition in centrally planned economies.

the new laws. In addition, the government established an Intellectual Property Agency with a mission to promote the enactment of strong IPR legislation and develop regulations and enforcement mechanisms for curbing violations.<sup>4</sup>

To complement its new domestic IPR legislation, Russia became a member of major international conventions, such as the Paris Convention, Universal Copyright Convention, Berne Convention, and Geneva Phonogram Convention. Together with ten other countries (republics of the former Soviet Union), Russia joined a new Eurasian Patent Convention. Provisions of this Convention allow filing a single application (in Moscow) in one language (Russian) and a single patent examination, while patents take force in all member countries (Robinson 1995).

### III. PIRACY AND ENFORCEMENT OF INTELLECTUAL PROPERTY RIGHTS

Notwithstanding the historical significance of policy reforms, advancements concerning IPR protection are to no avail unless complemented by an adequate enforcement of new IPR laws. According to an international survey of business executives conducted by the World Economic Forum, IPR protection in Russia was poor and substantially lower than in China, South Korea, and Taiwan in 1995 (Chui *et al* 1996). An effective resolution of IPR disputes is dubious in Russia, since the country lacks special courts for IPR issues and many judges have insufficient experience and training in intellectual property law. Furthermore,

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<sup>4</sup> To a certain degree, the new IPR legislation promotes compatibility with the previous award-based system by allowing for the convertibility of author certificates into patents. This option is limited in practice, due to public ignorance and disbelief in patents, as well as administrative and financial expenses. Conversion of author certificates into patents is likely to be worthy only for the most valuable inventions, particularly those with export potential.



being constrained by relatively low purchasing power, Russians oftentimes regard piracy as ethically acceptable, and it is doubtful that such attitude can change overnight.

In the meantime, piracy of computer software, electronic media, and trademarks flourishes in Russia. Computer software is an example of the most outrageous violation of IPRs. In 1995, pirated software accounted for about 94 percent of all software in use (*Economist*, July 27, 1996: 58).<sup>5</sup> According to Business Software Alliance's estimates, annual losses from software piracy in Russia reached about \$500 million in 1995 (*Economist*, July 27, 1996: 58).<sup>6</sup> To a certain extent, the magnitude of software piracy is due to technical difficulties in accessing *Internet* that prevent Russian users from downloading free copies of demonstration software (Harmon 1996). Russians also justify software piracy as a market promotion tool beneficial for foreign companies. With low real incomes, most domestic customers cannot afford expensive copyrighted software. By purchasing cheap [but occasionally inferior-quality]<sup>7</sup> pirated software, consumers develop loyalty to the product. In the future, when incomes rise, such customers may prefer to buy higher-quality copyrighted software rather than a pirated version.

Like software piracy, counterfeiting of foreign trademarks, tradenames and appellations of origin remains rampant in Russia. Domestic manufacturers of shoes, computers, videocassettes, and consumer electronics use foreign company names and logos

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<sup>5</sup> To prevent piracy losses, foreign companies adopt alternative strategies, such as cooperative agreements with major Russian computer manufacturers, and maintain an active presence in Russia's market.

<sup>6</sup> Industry's estimates of piracy losses are often biased upward, as they assume that the purchased quantity of a higher-priced legal good would be the same as the purchased quantity of the pirated good. This is an unrealistic premise in most cases, since the price of a legal item is likely to become prohibitive for some consumers. Moreover, estimates are often based on prices in industrialized countries, in which the price structure and consumer incomes typically differ from that in the pirating country. Finally, innovator industries may have an incentive to overstate their losses for lobbying purposes. Therefore, estimates of piracy losses are usually indicative rather than definite measures of the extent of piracy and hence should be interpreted with caution.

<sup>7</sup> Pirated software sometimes represents a so-called beta-version, i.e., trial and imperfect one, and may have viruses. Descriptions and manuals are of low quality or completely lacking. In addition, users of pirated software are denied access to customer support lines.

for marketing purposes. For example, Russian industry experts estimate that a false label "Made in USA" increases total sales of computer hardware by about 20 percent. Despite the attractiveness of foreign trademarks and tradenames, Russian pirates commonly recognize the ethical wrong-doing. Furthermore, domestic companies gradually become more familiar with a legal way of using foreign trademarks -- licensing the trademark and manufacturing the original equipment under a contract with the trademark owner. To cite an instance, a Russian computer manufacturing company, Micron,<sup>8</sup> successfully produces microprocessors for South Korea's Samsung, while a Moscow watch manufacturer, 1st MChZ, assembles chronographs, high precision mechanisms, for the Swiss *Rolex* and *Omega* (Sinitskii 1996).

The dynamics of videocassette piracy demonstrate a tendency towards strengthening IPR protection. In 1995, the total turnover of Russian video pirates was estimated at about \$500 million (Golubev and Borisov 1995).<sup>9</sup> Part of this revenue represented losses to the original recording producers. As recently mentioned in *Los Angeles Times*, the US recording industry argues that it has lost about \$240 million to Russian video pirates in 1995 (Harmon 1996).<sup>10</sup> Yet Russian firms often see piracy as their temporal occupation and prefer to do legal business. As a rule, revenues from selling better quality and higher priced videocassettes under a copyright license from the owner exceed those for pirated videos. Prices of legal videocassettes are greater than those of pirated versions by two-three times, while the quantity demanded does not differ significantly. However, new domestic video firms often lack sufficient funds to purchase copyright licenses. By distributing pirated videocassettes, Russian video firms try to accumulate the necessary capital and eventually switch to legal video business. Skillful bargaining with foreign copyright owners is likely to alleviate the

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<sup>8</sup> The Russian manufacturer is not related to the US computer company with the same name.

<sup>9</sup> Recent US movies, for example, "True Lies" and "Specialist", became available in Russia a day before their US premiere from retail stores in Moscow (Golubev and Borisov 1995).

<sup>10</sup> These estimates are likely to overstate piracy losses. See footnote No. 6 above.

need for capital, and Russian producers gradually gain experience in such bargaining (Liudmirskii 1996).

Additionally, domestic video firms are taking steps to enforce IPR protection independently and in cooperation with government authorities. Domestic video industry recently started publishing a reference list of legally purchased and distributed movies. Pirating and illegal distribution of movies on the list are rare, as legal firms effectively enforce copyrights by soliciting police raids of videocassette market places and confiscation of pirated versions (Liudmirskii 1996). Altogether, the profit advantages of legal business, as well as private and public efforts to enforce IPRs, provide a basis for the reduction of videocassette piracy in the future.

Unlike software and video copyrights, those for books and other literary works are already well-protected in Russia. At present, most new books are published under a license for copyrights. This was not the case before 1993, when book piracy flourished. Violations of book copyrights ended with the adoption of the domestic copyright law and Russia's joining the Berne Convention. The Association of Authors and Publishers Against Pirating and individual publishing agencies actively started to enforce copyrights by initiating legal suits against pirates. These efforts significantly contributed to the decline in book piracy. Russia's private publishing agencies are now acquiring licenses to copyrighted books rather than pirating them.

As a whole, Russia's IPRs, with the exception of software copyrights, have been progressing towards stronger protection since the early 1990s. Such a trend commonly emerges in developing countries (see La Croix 1992, Tabatchnaia-Tamirisa and Konan 1996, Chui *et al* 1996). Over time, as a developing economy moves closer to the technological frontier, promotion of indigenous innovation becomes more important than imitation, increasing incentives for tightening IPRs. Correspondingly, the political economy balance

shifts in favor of strong protection, as domestic innovator industries gain more lobbying power, supported by the foreign pressure for tighter IPR protection.

In Russia, government authorities are making efforts to limit piracy and enforce IPR laws. Russia's Customs Committee, for example, recently issued a special instruction regulating the procedure for the seizure of counterfeit *Barbie* dolls infringing on the trademark rights of a US company, Mattel. Since 1993, provisions regulating IPR enforcement by customs are part of the Russian Customs Code. According to these provisions, customs officials can confiscate (but not destroy) counterfeit items at the request of the official distributor of the company. Furthermore, Russian police occasionally organizes raids to confiscate pirated videocassettes. Most important, penalties for IPR violations will increase in 1997 from \$50 and "corrective labor" to a fine of \$12,000 and five years imprisonment (Harmon 1996). All these developments indicate an emerging trend in Russia towards stricter enforcement of IPRs. This trend is likely to mature in the future, as Russia continues its application process to the WTO.

A good record on IPR enforcement is likely to be a pre-condition for Russia's membership in the WTO. Russia submitted an official application to the WTO in June 1993, and since then has been providing information on its current economic and political situation to the WTO. At the next stage of the application process, bilateral negotiations for specific conditions of Russia's membership will take place. To satisfy provisions of the Agreement on Trade-Related Intellectual Property Rights (TRIPS) under the Uruguay Round of the GATT, Russia will have to provide evidence of strong legal protection and effective enforcement of IPRs. Though the discussion of IPR protection is not likely to take place earlier than 1997, the TRIPS Agreement may become a confrontational issue considering the evidence of rampant piracy in Russia. Primarily, strengthening IPRs in Russia requires the improvement of IPR enforcement, since domestic IPR laws are generally in line with the legal protection in major industrialized countries.

#### **IV. ECONOMIC EFFECTS OF STRENGTHENING INTELLECTUAL PROPERTY RIGHTS**

Will Russia benefit from tightening IPR protection? The conventional wisdom suggests that economic gains from stronger IPRs depend on a variety of factors, including market structure and the capabilities of innovator and imitator industries, as well as existing distortions in the economy. The extent and nature of direct foreign investment and its future also influence gains and losses from changes in the IPR regime. Additionally, since Russia is in the process of transition to a market economy, the sequence and structure of economic reforms are critical determinants of welfare effects. Important insights into possible costs and benefits of strengthening IPRs are suggested in the traditional economic literature on IPR protection.

As in many developing countries, stronger IPRs in Russia are likely to cause an adverse movement in the terms of trade and decline in purchasing power. By increasing imitation costs, stronger IPRs raise prices and lower real incomes. At the same time, higher costs curtail imitation and increase the number of product varieties manufactured in foreign industrialized countries. To the extent that Russia imports such higher priced goods, the domestic terms of trade worsen. All in all, Russia loses from stronger IPRs due to the decline in the terms of trade and real income (see Helpman 1993).

In contrast to economies without indigenous innovation, strengthening IPRs in Russia is likely to generate welfare gains from an expansion in domestic R&D (see La Croix and Kawaura 1995, Kawaura and La Croix 1995). Russia has significant R&D experience in many areas, for example, aerospace, material sciences, lasers, etc. Some domestic inventions match or exceed comparable world standards (Table 2).

TABLE 2  
 Technical Level of New Prototypes, 1990<sup>a</sup>  
 (units)

Type	Prototypes Developed	Technical Level Relative to the Highest World Standard			
		Above	Equal to	Below	Not identified
Machines, equipment, and apparatus	963	38	749	29	147
<i>For example,</i>					
Power engineering, diesel engines	25		24		-
Electrical equipment and materials	146		131	-	14
Medical equipment	40	5	28	-	7
Chemical, pumping and compressor equipment	63	4	50	1	
Instruments and means of automation	203	8	171	2	22
<i>For example,</i>					
Machines and instruments for measuring mechanical values	23	3	19		
Technological process control and regulating instruments	70	2	64		4
Physical research instruments	19		17		2
Optical research instruments	16		15		

a. Data refer to the Soviet Union.

*Source:* Center for Science and Research Statistics (CSRS), Russian Federation Ministry of Science and Technological Policy and Academy of Sciences, 1992b, *Science and Technology in Russia: 1991*, Moscow, Russia.

By stimulating R&D investment, tighter IPR protection promotes not only quality improvement, but also the development of new products and processes (Table 3). In addition, if new products are tradable, higher export revenues are likely to add to the overall welfare gains.<sup>11</sup>

<sup>11</sup> It is worth noting that Russia's R&D has been traditionally concentrated in the defense sector. With the end of the cold war and Russia's transition to a market economy, the conversion of the defense sector has been initiated. The future growth of Russia's R&D depends on the success of the conversion reforms, and in this regard IPR protection can become an important policy instrument for stimulating commercial R&D. [See Sanchez-Andres (1995) for the detailed description of the conversion process in Russia's defense sector.]

TABLE 3  
Types of Inventions, 1989<sup>a</sup>  
(percent)

Type of Invention	Percentage of Total Number of Inventions
Minor improvements	40.2
Major improvements	46.8
New products	13.0

a. Data refer to the Soviet Union.

*Source:* Center for Science and Research Statistics (CSRS), Russian Federation Ministry of Science and Technological Policy and Academy of Sciences, 1992a, *Nauka v SSSR: analiz i statistika*, Moscow, Russia.

Nonetheless, net gains from strengthening IPRs in Russia are limited by the costs of adjustment to the new IPR institutions and general public ignorance of IPR protection. Though Russia's government has rapidly changed formal IPR institutions by adopting new IPR laws, the development of supporting legal infrastructure and conversion of informal institutions, such as traditions, customs, and codes of conduct, are likely to take a much longer time. Some scientists and managers lack experience and understanding of patenting and believe in protecting their technology by secrecy. Others naively consider a public demonstration of novelty and authorship sufficient to protect their inventions.

Frequently, high technology industries and individual inventors fail to capture the benefits of international and domestic IPR protection due to their ignorance and inexperience in the use of IPRs. According to Russia's Ministry of Science and Technology, many international agreements on technology licensing and international R&D cooperation are discriminatory against Russian participants and violate Russian IPR laws (Buben 1996). In early 1996, a US delegation, including experts from the Departments of State, Energy, Defense, and Commerce, collaborated with representatives of Russia's Ministries of Science

and Technology, and Defense, and others in formulating recommendations on IPR protection and licensing (Buben 1996). Even without legal force, these recommendations are likely to assist Russian scientists and executives in drafting international contracts and facilitate mutually beneficial participation of domestic firms in international technology trade. In the long run, as the familiarity of Russian producers with IPR protection grows, welfare gains from stronger IPRs are likely to realize more fully.

Russian IPR-intensive exports require effective IPR protection both domestically and abroad. To facilitate such protection and prevent an authorized copying of Russian intellectual property, an intergovernmental Russian-Chinese agreement on IPR protection was signed in April 1996. Provisions of the agreement stipulate regular exchange of information on legal developments in IPR protection and technology transfer, and cooperation in IPR enforcement. This agreement is likely to promote licensing of Russian technology to China and may prove useful in the renovation of industrial facilities constructed during 1950s and 1960s with Russia's technical assistance (Evdokimova and Blinnikov 1996).

The Soviet legacy of the state monopoly on the commercial use of intellectual assets limits IPR-intensive exports.<sup>12</sup> In the past, an author certificate was often issued in names of several inventors representing different research institutions and companies. In such cases, the ownership of intellectual property was ill-defined. Nowadays, faced with the prospect of technology licensing, individual inventors may disagree about converting the author

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<sup>12</sup> In some cases "reverse piracy" occurs, that is, a transfer of Russian intellectual property with Russian inventors subsequently questioning the legality of the transfer and bringing up infringement suits. The most famous cases in this category include a copyright on the computer game *Tetris* and trademarks of *Smirnoff* vodka. Invented by a Russian mathematician and software engineer Aleksei Pazhitnov in 1985, *Tetris* did not receive any domestic protection, since at the time Russia was not a member of international IPR conventions and did not have a patent law. The game made its way to the world market and for several years was distributed without any copyright license (Sinitskii and Liudmirskii 1995).

Prior to Bolshevik revolution, the trademarks of *Smirnoff* vodka were a family property of Smirnoffs. In the early 1930s the trademarks were sold to different foreign companies. Eventually, Heubline Inc. became the exclusive distributor of *Smirnoff* vodka. According to some estimates, the brand of *Smirnoff* vodka was worth \$1.4 billion in early 1996. A member of Smirnoff family recently sued Heubline for the "unauthorized" trademark use, questioning the authenticity of the original sale of trademark. A number of similar IPR cases are currently outstanding in Russian and US courts (Himmelstein, Galuszka, and Flynn 1996).



certificate into a domestic patent, and, instead, seek independent patenting of the innovation abroad. Then, a licensing agreement becomes a major challenge (Khoroshavina and Osokin 1995).<sup>13</sup>

There are no instant and effortless solutions to such problems. However, over time, as a court system for IPR disputes and legal precedents develops, the socialist heritage of missing IPRs may fade away. The role of public policy in this respect lies in reducing the costs of bargaining and transactions, for example, by clarifying IPR laws and promoting effective and speedy legal resolution of IPR-related disputes. The Ministry of Science and Technology should take an active role in licensing negotiations in order to override narrow agency interests and facilitate technology trade. Additionally, the government should engage in the provision of legal assistance, dissemination of information, and education of domestic producers on IPR issues.

Another important determinant of welfare effects resulting from strengthening IPRs is market structure (see, for example, Maskus and Konan 1994, and Subramanian 1994). The more imperfectly competitive is market structure, the smaller is the loss of consumer surplus from strengthening IPRs. To the extent that market structure varies among industries in Russia, the welfare effects of strengthening IPRs are likely to differ across industries. In highly competitive industries, such as retail trade in video and software, one would expect substantial consumer surplus losses, while customers of less competitive pharmaceutical and chemical industries to be relatively less vulnerable to strengthening IPRs. These losses are likely to be partially offset by gains from other sources, for example, trade and direct foreign investment.

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<sup>13</sup> Legal and bargaining difficulties in technology licensing have prompted some foreign companies to seek alternative strategies. Direct R&D contracting with research institutions, for example, allows foreign companies to obtain ownership rights for innovations.

The expansion of trade and direct foreign investment under a stronger IPR regime can bring additional welfare gains (see for example, Maskus and Penubarti 1995, Maskus and Konan 1995, Mansfield 1994). Empirical evidence suggests that strong IPRs stimulate bilateral trade, particularly in large countries. Likewise, tightening IPR protection is likely to promote trade and technology transfer between Russia and foreign countries by rendering protection to firms' knowledge assets. For the same reason, stronger IPRs will encourage direct foreign investment, particularly in domestic high technology sectors with innovative potential. Such foreign investment is much needed in Russia to facilitate technological modernization and market restructuring.

In a transition economy like Russia, the welfare analysis of strengthening IPRs must take into account the optimal sequencing of economic and political reforms. The cornerstone of Russia's reforms is privatization, including the market transformation of legal and financial institutions. The adoption of new laws and regulations is the first step in the privatization process and should be complemented by enforcement through legal and political institutions. Furthermore, various economic institutions, primarily financial ones, should support privatization by providing a favorable economic environment for the growth of private enterprise. Being inseparable and reinforcing parts of market transition, IPR reforms and privatization of physical assets should occur simultaneously. With the origination of private firms, IPRs become the main instrument for stimulating innovation, particularly in countries with limited public funds.<sup>14</sup> Reciprocally, IPR protection is a necessary complement to privatization of physical assets in IPR-intensive sectors, since a meaningful appraisal of assets should include the value of intellectual property. Therefore,

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<sup>14</sup> Historically, private property in land and physical capital has emerged before IPRs. This historical pattern may not apply to transition economies in a global world undergoing international harmonization of IPR protection.

for the successful implementation of market reforms, privatization of physical and intellectual assets should proceed in parallel.<sup>15</sup>

## V. POLICY DIRECTIONS AND CONCLUDING REMARKS

Successful transition to a market economy necessitates tightening IPR protection in Russia. With the country becoming integrated in the world economy, Russian companies gain experience and stakes in the international protection of IPRs. In the author's opinion, the primary role of public policy in Russia lies in promoting the development of legal infrastructure for IPR protection rather than direct regulation and control of technology transfer and licensing. Additionally, the government should actively engage in dissemination of information and education of domestic producers in IPR protection and international practices in trade and technology transfer. Public provision of legal assistance on IPR issues to domestic producers is likely to reduce the costs of their adjustment to the new IPR institutions and hence realize benefits of IPR protection sooner.

Another role of Russia's government lies in limiting piracy and taking measures to enforce IPRs. Stronger IPR enforcement is imperative for stimulating domestic innovation, international trade, and foreign direct investment in Russia. Furthermore, the country has to upgrade IPR enforcement to proceed with its application process in the WTO. Improvement of IPR enforcement is likely to be gradual, as time is needed for the development of the judicial infrastructure to complement existing legal protection.<sup>16</sup>

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<sup>15</sup> Besides the problem of sequencing market reforms, transition economies have another distinct feature -- numerous non-market distortions. With such distortions as excessive government regulation, entry restrictions, import substitution policies, etc., welfare effects depend on the interaction among IPRs and other policy instruments. As the conventional economic literature demonstrates, in the second-best world welfare effects of policy changes are ambiguous.

<sup>16</sup> In the interim, the implementation of some specific policy can advance Russia's IPR protection and

Like most transition economies, Russia is an intermediate case in the current debate over the international harmonization of IPRs. The long history of indigenous R&D makes Russia close to industrialized countries, while the need for technological modernization gives Russia a case for imitation. Though economic losses due to piracy in Russia are comparable to those in many Asia-Pacific countries, Russia has inherent incentives to strengthen IPRs soon, as its market reforms and application to the WTO progress further.

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at the same time benefit foreign companies. Dratler and Sherwood's (1995) proposal, for example, relies on historical precedents after the First and Second World Wars, when the United States extended priority periods to its wartime adversaries in compensation for the disruption of international commerce and patenting during the wars. Similar extended priority periods for Russia would allow Russian technology, first disclosed in Russia but never made the subject of a United States patent application, to become the subject of a priority period. Dratler and Sherwood suggested the length of this extended period be five to ten years from the date of the application for the Russian patent or author certificate or publication. This policy would give the West access to Russia's technological wealth, while providing capital and facilitating Russia's transition to the market.

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