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**Introduction to Intellectual Property Rights, Software Protection
&
Development in the South Mediterranean Countries (*)**

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Abstract

This paper looks at the role of intellectual property rights in development in the context of South Mediterranean countries. A special focus is placed on software piracy data and analysis to assess the current losses implied by the practices of non compliance with IPRs. Descriptive and regression analyzes are used to show the links between piracy, economic losses and development.

The results show how the strengthening of domestic institutions may not mean only applying “the law” and pursuing legally the non compliant. But it means the inclusion of the all players into the process of development. Further research and development besides optimal IPR protection appear to be necessary. The inclusion of the informal sector is then an important part of this enterprise. This requires policies of formalization besides mobilization of knowledge and intellectual property rights among the informal producers and traders.

Keywords: Intellectual property rights; software piracy; development; South Mediterranean countries.

JEL: O₃₄-O₅₇

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Introduction

Previous studies have shown that important waves of reforms have been undertaken in the South Mediterranean Countries (SMC). At the same time, domestic institutional changes besides the role of knowledge have been recognized. Knowledge has been identified as the most important driver for technological and institutional changes. Also, it has been widely discussed that institutions and mainly free markets and trade require further enforcement of Intellectual Property Rights (IPRs) to have economies ensure higher levels of competitiveness.

In relation to World Intellectual Property Organization (WIPO), every economy has developed institutions that are in charge of enforcing and monitoring IPRs. This has been further strengthened with the trading agreements undertaken by these countries. But with the development of new technologies, further challenges are facing all economies, including the ones that are in development.

South Mediterranean economies are also facing these new challenges. They have on one hand to implement IPR protection and to benefit from new technologies on the other hand. But, in this process, they are facing inappropriate means of access to these technologies. The software system is an example where SMC are facing piracy and illegal access to these resources.

This paper analyzes the role of domestic institutions in enforcing IPRs in South Mediterranean countries. This is helpful in understanding how innovation and technologies are adopted and how local and international agreements have been fulfilled. Also, the understanding of trade and movements of foreign direct investment (FDI) are recognized as means that can capture the levels of enforcement of IPRs.

The current paper is composed of three sections. The first one addresses the major trends in the review of related literature. The second emphasizes both the institutional dimensions and the major quantitative issues related to IPRs in the case of software. The last section introduces the major results of the links between piracy rates and development in the case of SMC.

I. Literature Review

David (1992) investigates the historical evolution of Intellectual Property Rights (IPR), and traces the present state of modern IPRs. The advancement in technologies and the importance of research and development made the product life shorter and made it very easy for engineers to copy innovative ideas from competitors. This drove companies to care more about ways to

protect its innovations in all fields. The current spirit behind the concept of IPRs is more lucrative and utilitarian. It is based on defending rights of collecting money coming from innovative works. However, the historical sense of IPRs was that the innovators get credit for their work, but then everybody could benefit from the scientific or technological advancement.

Hatipoglu (2007) aims at building a theoretical framework that integrates the relationship between multinational companies (MNCs) and host governments. Hatipoglu (2007) builds up onto two hypotheses supporting the fact that governments' evasion from their commitments on IPR protection is greatly affected by the nature of their political system and their institutions that sort out the society's demands. Furthermore, Hatipoglu (2007) suggests that the conceptualization of knowledge production is subject to interest conflicts between the MNCs and the host government. Evidence from Hatipoglu (2007) asserts that domestic institutions and political systems are important components of foreign investors' evaluation of the government commitment to IPR protection. In fact, it is stated that MNCs are more likely to favor IPR protection commitments by countries that are less democratic and are initiating development, which is due to less economic growth and thus, less public pressure concerning consumption and satisfaction.

Sinha (2007) studied the influence of the World Trade Organization (WTO) on the "institutional development and policy responses" in India as an example of the level of international organizations' influence on the way the country internationalize. Policy makers and societal groups are under this influence going to either push towards more globalization in some domains or towards less globalization in others.

According to Sinha (2007), the rules and regimes of global trade have a great effect on states, bureaucratic politics, and political institutions. For example, the international organizations may influence the country towards more costs for international trade, and the domestic organizations may respond by influencing towards reducing those costs.

Globalization is composed of many aspects and dimensions; each of which influences the countries in a different manner. International trade streams and changes in international prices do not exhaust global pressures, yet they are interceded and refracted by international institutions. Usually, the consequences of global regulations might oppose the incentive forecasted by global markets (Sinha, 2007).

Aboites & Cimoli (2004) show that the analysis of, the Mexican innovation system and the industrial information, is crucial to setting up a new intellectual property right framework. They try to frame the IPRs system in Mexico through the analyses of patents considering

various patents systems. Besides, the new IPR framework and the recent economic and industrial reforms in Mexico do not encourage the development of Mexican technologies. This point is especially relevant to trade liberalization because of the unfavorable mechanisms for the diffusion of innovation within the system. Hence, the use of patent as an instrument to analyze this new framework is inappropriate. Patents represent a weak motivation for local invention and dissemination of innovation as it is biased against local efforts of research and development. It is also argued that incentives to innovate and incentives to open trade create even greater adverse methods of innovation diffusion within the system (Aboites & Cimoli, 2004).

II. Descriptive analysis

This is composed of two parts. The first one describes the institutional mechanisms and organizations that are governing the implementation of IPR. The second part looks at the trends expressed in different variables related to IPR protection and to economic development.

II.1. Domestic and International IPR arrangements in SMC

Each country as a member of World International Property Rights Organization has offices that aim at issuing rights (patents, trademarks as well as copyrights) and protecting them from risks of infringements. Table 1 introduces a summary of the institutions that are in charge of IPRs in each of the countries composing the SMC.

Table 1: Domestic & International Institutions related to property rights per Country

Country	Domestic Institutions	International Institutions
Morocco	<ul style="list-style-type: none"> • Moroccan Patent Office in Casablanca, • Trademark Office, • Bureau Marocain des Droits d'Auteur, • OMPIC. 	<ul style="list-style-type: none"> • Member of the World Intellectual Property Organization (WIPO), • GATT, • Paris Industrial Property, • Universal Copyright conventions, • Bern Copyright, • Brussels Satellite Convention, • Madrid, Nice and the Hague Agreements for the Protection of Intellectual Property.
Algeria	<ul style="list-style-type: none"> • National Copyright Office (ONDA), • Anti-counterfeiting office within the Ministry of Commerce (seven regional offices), • Abu-Ghazaleh Intellectual Property Bulletin (AGIP), • National Algerian Institute for Industrial Property (INAPI). 	<ul style="list-style-type: none"> • Signatory of the Paris Industrial Property Convention on Copyrights, • Signatory of the Bern convention for the protection of literary and artistic works, • Signatory of the Madrid Arrangement and Lisbon Agreement for the protection of appellations of origin and their international registration, • Intended to ratify the 1996 WIPO Copyright

		Treaty (WCT) and the WIPO Performance and Phonograms Treaty (WPPT) during the course of 2005.
Egypt	<ul style="list-style-type: none"> • Office for Registration of Industrial Designs. 	<ul style="list-style-type: none"> • Signatory to the Paris Convention of the Protection of Intellectual Property, • Madrid Agreement regarding international registration of trademarks, • Member of the World Intellectual Property Organization (WIPO).
Tunisia	<ul style="list-style-type: none"> • Patent Office, • Tunisian Institution for the Protection of Copyright. 	<ul style="list-style-type: none"> • Signatory of the Paris Convention for the Protection of Industrial Property, • Paris Convention Regarding Trademarks, as revised in the Hague, London and Stockholm, • Member of the WIPO, • Signatory of the UNCTAD agreement on the protection of patent and trademarks, • Member of the International Center for Settlement of Investment Disputes, ICSID, • Member and signatory to TRIPS Agreement, • Membership of other bodies/ treaties: UCC, UPOV.
Jordan	<ul style="list-style-type: none"> • Patent Office (Registrar of Patents), • Registrar of Trademarks, • Ministry of Culture. 	<ul style="list-style-type: none"> • Signatory to the Paris Convention for the Protection of Industrial Property, • Signatory of the Bern Treaty, • Part of the International Union for the Protection of New Varieties of Plants (UPOV) in 2004, • Member of the WIPO.
Lebanon	<ul style="list-style-type: none"> • Patent Office, • Trademark Office, • Ministry of Trade and Commerce. 	<ul style="list-style-type: none"> • Signatory to the Paris Convention (London text), • Madrid Agreement for the Repression of False or Deceptive Indications on Goods (London text), • Nice Agreement for the Classification of Goods and Services, • Signatory of the TRIPS agreement
Syria	<ul style="list-style-type: none"> • Patent and Trademark Office, • Office of Property Protection of the Ministry of Supply and Internal Trade. 	<ul style="list-style-type: none"> • Signatory to the Paris Convention for the International Protection of Industrial Property, • Madrid Agreement concerning the suppression of false statements of origin. • Considering accession to the 1967 Stockholm Intellectual Property Rights Agreement.
United Arab Emirates	<ul style="list-style-type: none"> • Patent Office, • Trademark Office. 	<ul style="list-style-type: none"> • Signatory of the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), • Member of GATT, • Signed the Paris Convention, Bern Convention, PCT, Rome Convention, • Signatory of the WIPO Convention, WCT, WPPT.
Saudi Arabia	<ul style="list-style-type: none"> • Patent Office, • Civil right directorates of the Interior Ministry, • Administrative commission with legal competence that sits in the City of King Abdul Aziz for Science and Technology, • Trademark Office, • Administrative judiciary channels in the Commerce Ministry, • Grievance Board (Legal matters). 	<ul style="list-style-type: none"> • US Special Trade Representative Office.

Kuwait	<ul style="list-style-type: none"> • Kuwait Patent Office in the Ministry of Trade and Industry, • Trademark Office, • Kuwait Regional Center for Anti-Counterfeiting & Piracy (KRCACP). 	<ul style="list-style-type: none"> • Gulf Corporation Council "GCC", • Signatory of the Trade and Investment Framework Agreement with the United States.
Bahrain	<ul style="list-style-type: none"> • Copyright Protection Office in the Ministry of Information, • Patents and Trademarks Registration Office, • Directorate of Industrial Property under the supervision of the Ministry of Industry and Commerce. 	<ul style="list-style-type: none"> • Ratified the Bern Convention for the Protection of Literary and Artistic Works, • Approved the Paris Convention for the Protection of Industrial Property, • Contemplating joining the Madrid Agreement regarding the International Registration of Marks, • Endorsed treaties such as the Patent Law Treaty (PLT) and Madrid Protocol (2005), • Signed treaties to enforce its position: Trademarks Law Treaty (TLT) in 2007.
Oman	<ul style="list-style-type: none"> • Commercial Disputes Settlement Committee, • Ministry of Commerce and Industry. 	<ul style="list-style-type: none"> • Joined the World Intellectual Property Organization (WIPO) in September 1996. • Joined the World Trade Organization (WTO).
Qatar	<ul style="list-style-type: none"> • Trademarks Office, • Copyright Bureau. 	<ul style="list-style-type: none"> • Joined the Paris and the Berne conventions in 2000, • Joined the WIPO copyright convention in 2005, • Joined the WIPO "Performances and Phonograms Treaty" in 2005, • Part of the Gulf Cooperation Council since 1998.
Israel	<ul style="list-style-type: none"> • Patent Office, • Trademark Office. 	<ul style="list-style-type: none"> • Member of the Paris Convention for the Protection of Industrial Property, • Berne convention on Literary and artistic works, • Madrid convention on trademarks, • Geneva and Strasbourg agreements, • Signatory of the World Trade Organization agreement on intellectual property rights (TRIPS).
Yemen	<ul style="list-style-type: none"> • The government of Yemen, • Ministry of Industry and Trade. 	<ul style="list-style-type: none"> • Member of the WIPO convention, • Signatory of the Paris for industrial property convention (2007), • Yemen is not a member of any other international body.
Turkey	<ul style="list-style-type: none"> • Anti piracy provincial commissions, • IPR office within the Police General Directorate. 	<ul style="list-style-type: none"> • Bern Convention for the protection of scientific, literary and artistic works, • Rome Convention on the protection of performers, producers and phonogram and broadcasting organisations, • Participation to the European Patent Convention and European Patent Organisation.
Iraq	<ul style="list-style-type: none"> • The patent registry and industrial design registry, • Central Organization on Standards and Quality Control (COSQC), an agency of the Ministry of Planning and Development Cooperation, • The Ministry of Culture, • The Ministry of Industry and Minerals. 	<ul style="list-style-type: none"> • WTO Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), • Paris Convention for the Protection of Industrial Property (1967 Act) ratified by Law No. 212 of 1975, • World Intellectual Property Organizations (WIPO) Convention, • Arab Agreement for the Protection of Copyrights ratified by Law No. 41 of 1985, • Arab Intellectual Property Rights Treaty (Law No. 41 of 1985), • Signatory of the WIPO Convention and the Paris Convention (Industrial Property) since January 1976.

II.2. Quantitative descriptive analysis of IPR on Software protection

To evaluate the strategies made by domestic institutions in the domain of protection of intellectual property rights in the form of softwares, the case of software piracy is used. The MENA countries considered in the sample are Algeria, Bahrain, Egypt, Israel, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, Tunisia, Turkey and the United Arab Emirates. Some variables are studied in this case study to discover the causal relationships and effects between them.

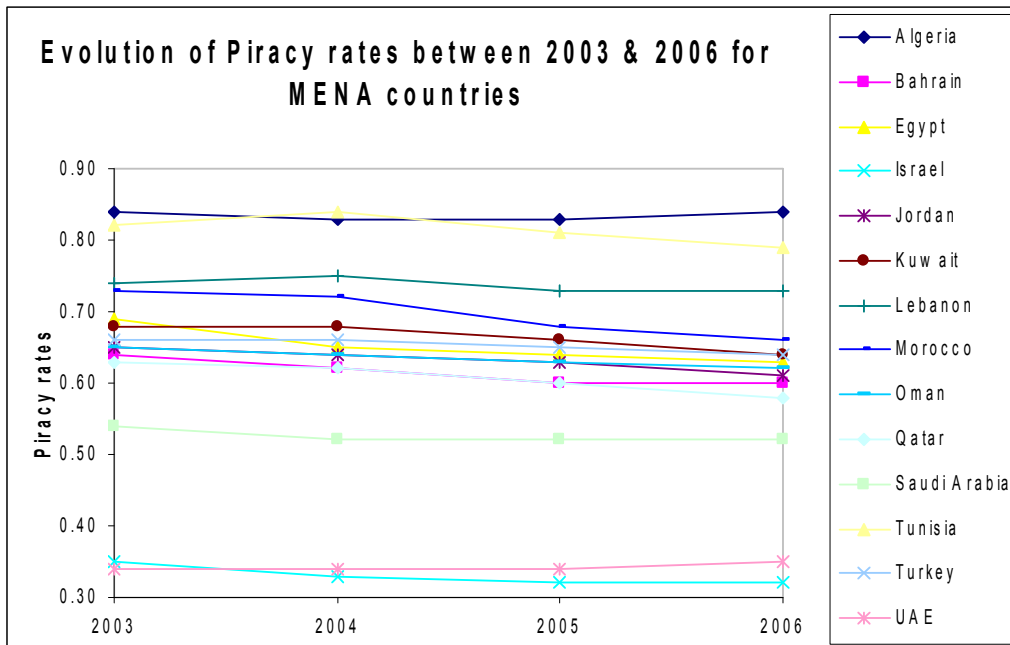
As per BSA (2007) the levels of piracy rates and losses (million US dollars) are introduced in Table 2. This shows that the piracy rates are high and range from 34 to 84 percent. But the losses do not all the time vary in the same direction with the highest level of losses attained in Turkey, Saudi Arabia, Israel and Egypt.

Table 2: Piracy rates and losses (BSA, 2007)

Countries	Piracy rates				Losses (\$M)			
	2003	2004	2005	2006	2003	2004	2005	2006
Algeria	0.84	0.83	0.83	0.84	59	67	66	62
Bahrain	0.64	0.62	0.6	0.6	18	19	22	23
Egypt	0.69	0.65	0.64	0.63	56	50	80	88
Israel	0.35	0.33	0.32	0.32	69	66	84	102
Jordan	0.65	0.64	0.63	0.61	15	16	19	19
Kuwait	0.68	0.68	0.66	0.64	41	48	65	60
Lebanon	0.74	0.75	0.73	0.73	22	26	34	39
Morocco	0.73	0.72	0.68	0.66	57	65	55	53
Oman	0.65	0.64	0.63	0.62	11	13	22	25
Qatar	0.63	0.62	0.6	0.58	13	16	21	23
Saudi Arabia	0.54	0.52	0.52	0.52	120	125	178	195
Tunisia	0.82	0.84	0.81	0.79	29	38	54	55
Turkey	0.66	0.66	0.65	0.64	127	182	268	314
UAE	0.34	0.34	0.34	0.35	29	34	45	62

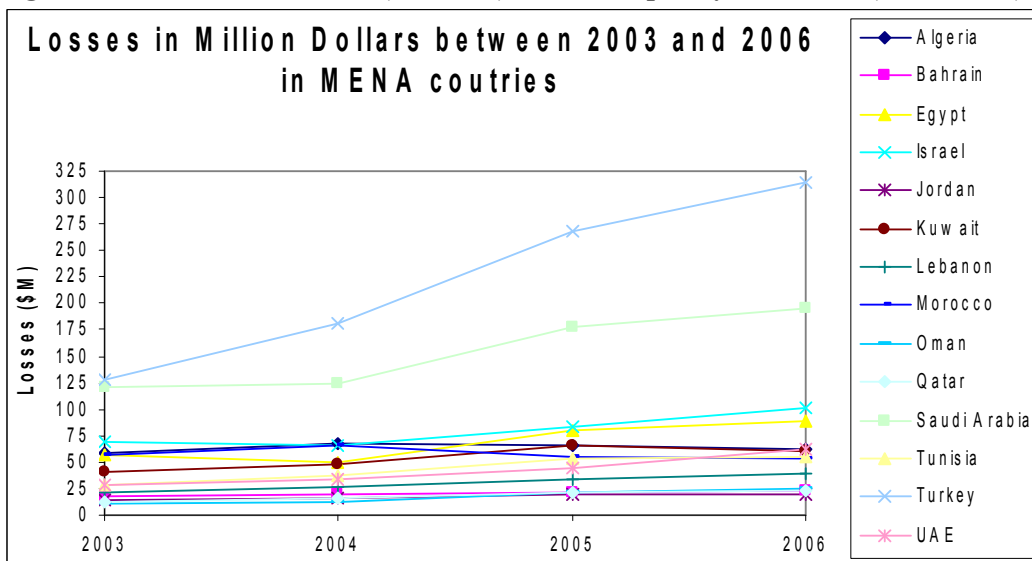
The software piracy rate variable (BSA, 2007) shows the evolution of the rate of piracy of the above countries individually from 2003 to 2006 (Figure 1). It is clear from Figure 1 that the countries that suffer most from software piracy are Algeria, Egypt, Lebanon, Morocco and Kuwait while Israel and the United Arab Emirates have the lowest piracy rates among the countries of the sample.

Figure 1: Evolution of piracy rates in MENA countries (2003- 2006)



The second variable concerns the losses (BSA, 2007) that result from software piracy between 2003 and 2006 (Figure 2). The graph shows the importance of losses in Turkey and Saudi Arabia which are increasing through the period studied. For the other countries in the sample, the losses are rather stagnant or slight increasing/ decreasing through the years.

Figure 2: Evolution of Losses (\$Million) related to piracy in MENA (2003- 2006)



The net foreign direct investment (FDI) and the export value index for 2003- 2006 period are also considered to measure the impact of software piracy on trade operations and agreements. However, these values are not available for Algeria, Qatar and the United Arab Emirates (Table 3). In 2006, there is a lack in many countries data which will make it difficult to use in the measurement of software piracy impact.

Table 3: Net FDI and Export value index for MENA countries (2003- 2006)

Countries	Net FDI (\$Million)				Export value index (2000 = 100)			
	2003	2004	2005	2006	2003	2004	2005	2006
Bahrain	-225	-170	-74.8	-	107.05	121.37	161.82	193.81
Egypt	217	1090	5280	-	134.60	160.58	227.60	293.29
Israel	1800	-2460	1430	517	101.08	122.52	136.04	148.86
Jordan	436	651	1530	-	155.25	215.66	238.24	-
Kuwait	4890	-2500	-4460	-	104.38	147.14	232.44	299.58
Lebanon	2250	1070	1860	-	213.33	244.56	257.08	322.41
Morocco	2300	862	1520	-	118.02	133.52	142.27	-
Oman	336	-49.4	671	-	103.09	117.87	165.14	194.62
Saudi Arabia	-587	-334	-2350	-	120.35	162.62	214.76	-
Tunisia	539	592	713	-	137.21	165.55	179.37	196.80
Turkey	1250	2070	8730	-	181.62	242.29	283.38	319.49

In general, there is an increase in the net foreign direct investment (FDI) data and export value index from 2003 through 2006. The property rights as well as the freedom from corruption sub-indicators of the index of economic freedom (IEF) are also considered in the measurement of impact of software piracy (Heritage Foundation, 2008). The property rights values show stagnant and decreasing values from 2003 to 2006.

Table 4: Property rights, freedom from corruption (Both sub-indicators of IEF), KEI and GDP index values for MENA countries

Country	Property Rights (IEF)				Freedom from Corruption (IEF)				KEI 2004	KEI 2006	GDP Index 2003
	2003	2004	2005	2006	2003	2004	2005	2006			
Algeria	30	30	30	30	50	50	26	27	2.80	3.20	0.51
Bahrain	70	60	70	70	70	70	61	58	5.19	6.00	0.73
Egypt	50	50	50	50	36	34	33	32	3.77	4.01	0.42
Israel	70	70	70	70	76	73	70	64	7.81	8.36	0.76
Jordan	50	50	50	50	49	45	46	53	5.02	5.35	0.44
Kuwait	70	50	50	50	70	70	53	46	5.52	6.09	0.74
Lebanon	30	30	30	30	10	10	30	27	5.11	5.00	0.47
Morocco	30	30	30	30	47	37	33	32	3.21	3.40	0.42
Oman	50	50	50	50	70	70	63	61	3.51	5.33	0.68
Qatar	50	50	50	50	70	70	56	52	4.89	6.01	-
Saudi Arabia	50	50	50	50	50	50	45	34	4.82	5.07	0.67
Syria	-	-	-	-	10	10	34	34	2.71	-	0.40
Tunisia	50	50	50	50	53	48	49	50	4.11	4.69	0.54
Turkey	50	50	50	50	36	32	31	32	5.02	5.68	0.53
UAE	70	70	50	50	90	70	52	61	5.94	6.32	-

Yemen	-	-	-	-	10	10	26	24	1.17	-	0.10
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The freedom from corruption is decreasing in many countries. However, other countries know some increases between 2003 and 2006 especially Jordan and Syria (Table 4).

The knowledge economy index (KEI) is also an indicator of the impact of software piracy and is included in the case study for both year 2004 and 2006 (Table 4). In addition, Table 4 lists the values of GDP Index for different MENA countries in 2003.

The MENA average concerning the piracy rates, the losses in Million dollars, the property rights sub-indicator of IEF, the net FDI and the export value index are summarized in the following table. Table 5 shows a decrease in piracy rates from 2003 to 2006. However, in average, there is an increase in the total piracy losses for the same period. The property rights sub-index is decreasing during the same period while the net FDI and export value index are unstable (Table 5).

Table 5: MENA Average in Piracy Measures and related variables (2003- 2006)

MENA Average (14 Count.)	2003	2004	2005	2006
Piracy rates	0.64	0.63	0.62	0.61
Losses (\$M)	47.57	54.64	72.36	80.00
Property rights (IEF)	51.43	49.29	48.57	48.57
Net FDI	1200545455	74690909	1349927273	517000000
Export value index (2000 = 100)	134.18	166.70	203.47	178.99

III. Outcomes of regression analysis: Relationships between software piracy and development

This study will not only stress the effectiveness of protection but also the economic implications on foreign direct investments (FDI), trade, enterprise creation, economic performance in the South Mediterranean countries and bilateral and multilateral agreements.

To evaluate the efficiency of IPR protection, the internationally available data on piracy rates and economic losses will be needed as well as data on FDI, Exports, KEI, property rights indicator of the IEF and GDP index. Table 6 provides a summary of the most significant results of the log linear regressions attained.

Table 6: Regression results

Relationships	R ²	Obs.
$\text{Ln}(\text{Losses } \$M, 2006) = 0.02 + 1.01 [\text{Ln}(\text{Losses } \$M, 2005)]$ <small>(0.15) (25.99)</small>	0.98	14
$\text{Ln}(\text{Losses } \$M, 2005) = 0.33 + 0.98 [\text{Ln}(\text{Losses } \$M, 2004)]$ <small>(1.33) (14.98)</small>	0.95	14

$\text{Ln}(\text{Losses } \$\text{M}, 2004) = 0.17 + 0.99 [\text{Ln}(\text{Losses } \$\text{M}, 2003)]$ <small>(1.03) (22.27)</small>	0.98	14
$\text{Ln}(\text{Piracy Rate}, 2006) = -0.03 + 0.97 [\text{Ln}(\text{Piracy Rate}, 2005)]$ <small>(-2.50) (52.61)</small>	0.99	14
$\text{Ln}(\text{Piracy Rate}, 2005) = -0.03 + 0.98 [\text{Ln}(\text{Piracy Rate}, 2004)]$ <small>(-2.89) (57.429)</small>	0.99	14
$\text{Ln}(\text{Piracy Rate}, 2004) = -0.002 + 1.03 [\text{Ln}(\text{Piracy Rate}, 2003)]$ <small>(-0.19) (42.12)</small>	0.99	14
$\text{Ln}(\text{Piracy Rate}, 2005) = 0.64 - 0.76 [\text{Ln}(\text{KEI}, 2004)]$ <small>(1.99) (-3.64)</small>	0.52	14
$\text{Ln}(\text{Piracy Rate}, 2006) = 0.73 - 0.76 [\text{Ln}(\text{KEI}, 2006)]$ <small>(2.03) (-3.54)</small>	0.51	14
$\text{Ln}(\text{Piracy Rate}, 2004) = -1.61 \left[\frac{\text{Ln}(\text{FDI}, 2005)}{\text{Ln}(\text{Export Value Index}, 2005)} \right]$ <small>(-2.03)</small>	0.72	6
$\text{Ln}(\text{Property Rights}, 2005) = 3.55 - 0.58 [\text{Ln}(\text{Piracy Rate}, 2006)]$ <small>(25.47) (-2.43)</small>	0.33	14
$\text{Ln}(\text{Property Rights}, 2004) = 2.30 - 0.73 [\text{Ln}(\text{Piracy Rate}, 2005)]$ <small>(3.01) (-3.69)</small>	0.53	14
$\text{Ln}(\text{GDP Index}, 2003) = -0.82 - 0.56 [\text{Ln}(\text{Piracy Rate}, 2003)]$ <small>(-6.42) (-2.14)</small>	0.31	12
$\text{Ln}(\text{Property Rights}, 2006) = 1.43 + 0.64 [\text{Ln}(\text{Freedom from Corruption}, 2006)]$ <small>(2.37) (4.01)</small>	0.57	14
$\text{Ln}(\text{Property Rights}, 2005) = 1.27 + 0.68 [\text{Ln}(\text{Freedom from Corruption}, 2005)]$ <small>(2.19) (4.49)</small>	0.63	14

The regressions relating the index of intellectual property rights as a component of the Index of Economic Freedom (IEF) published by the Heritage Foundation is definitely related to the software piracy rate as published by the Business Software Alliance (BSA, 2007). The estimated equations show how the sub-index is negatively related to the software piracy rate. The freedom from corruption which is another sub-index of the IEF is positively related to property rights and thus negatively related to the software piracy rate (Table 6).

The other results show that software pirating (or intellectual property rights) has been and is still an issue in the region under study as far as economic losses are concerned (equations about losses). This is also confirmed by the piracy rates. But, the most important results are those related to the knowledge economy index (KEI) as having a depressing effect on the piracy rate. A one percent increase in KEI reduces the piracy rate by 0.76 percent. This means that further enhancement of education and research is likely to reduce the piracy rates. Furthermore and as expected the ratio of foreign direct investment to exports is negatively related to piracy rate, confirming that higher piracy rates do affect negatively the ratio of foreign direct investments and exports. The final result shows that GDP is negatively affected by piracy rates and therefore better protection of intellectual property rights are likely to contribute to the promotion of GDP in the countries under study.

While similar results are shown worldwide and at the level of series of economies, it is now clear that SMC economies will ensure further gains from reducing access to software piracy as an example of similar practices that may occur on other goods and services.

Conclusion

While SMC economies need further access to advanced technologies, they are faced with constraints related to the implementation the protection of IPRs. The domestic institutions that are directly in charge of IPRs have been promoting their functions to ensure their missions of protecting intellectual property rights and thus ensuring the contribution to SMC economies. The reforms undertaken in the region have further promoted market mechanisms but have contributed to further development of informal economies. These latter economies are those that often generate failure to protect intellectual property in all areas. These areas cover both old and new technologies but are pervasive in the works of arts, music and software besides other areas. This trend is generating direct and indirect losses that can lead to the elimination of domestic and foreign sources of services besides reduction of foreign direct investments and performance of each economy. This leads to the requirement of the strengthening of the functions of the domestic institutions that are dealing directly with intellectual property rights. But, the transversal nature of the impacts of non compliance is such that more institutions are invited to participate effectively to the effort. Furthermore, the intervention of all the players should also give priority to the inclusion of the informal industries such that they are part of the overall game. The solutions lie within the framework of formalization and inclusion of all players in order to provide win-win solutions to be identified and implemented. This effort requires also the collaboration of developed countries.

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