Metrics - IP standards, regulations and legal systems

Empirical work on the impacts of intellectual property legal standards and regulations on firms' innovation performance requires quantitative indicators. Several indicators have been developed, including the widely used indexes developed by Ginarte and Park (1997). Note that this particular index is an indicator of the legal strength of IP protection as specified by regulations—it does not reflect the experience "on the ground". The index has been used to analyse the impacts of IP standards on technology transfer and access to foreign knowledge among other dimensions of relevance to innovation.

Measures of IP Legal Standards and Regulation

A relevant policy question is to what extent IP systems support innovation performance. Thus empirical analysis requires adequate measure of IP systems to enable econometric assessments. Several indicators have been proposed, including Bosworth (1980), Ferrantino (1993), Rapp and Rozek (1990) and Mansfield (1994). The most widely used index in the academic literature was developed by Ginarte and Park (1997). This index was designed to provide an indicator of the strength of patent protection. Updated in 2008, the index is computed for 110 countries for 1960–90 (Park, 2008). The index is the unweighted sum of five separate scores for coverage (inventions that are patentable), membership in international treaties, duration of protection, enforcement mechanisms, and restrictions (for example, compulsory licensing in the event that a patented invention is not sufficiently exploited). Table 1 summarizes the scoring methodology (See Ginarte and Park, 1997 for explanations of the categories and features.)

Table 1: Components and scoring method of patent rights index

Overall score for patent rights index = sum of points under (1)–(5)

(1) Coverage	Available	Not available
Patentability of pharmaceuticals	1/8	0
Patentability of chemicals	1/8	0
Patentability of food	1/8	0
Patentability of surgical products	1/8	0
Patentability of microorganisms	1/8	0
Patentability of utility models	1/8	0
Patentability of software	1/8	0
Patentability of plant and animal varieties	1/8	0
(2) Membership in international treaties	Signatory	Not signatory
Paris convention and revisions	1/5	0
Patent cooperation treaty	1/5	0
Protection of new varieties (UPOV)	1/5	0

Budapest treaty (microorganism deposits)	1/5	0
Trade-related intellectual property rights (TRIPS)	1/5	0
(3) Duration of protection	Full	Partial
	1	0< f<1
(4) Enforcement mechanisms	Available	Not available
Preliminary (pre-trial) injunctions	1/3	0
Contributory infringement	1/3	0
Burden of proof reversal	1/3	0
(5) Restrictions on patent rights	Does not exist	Exists
Working requirements	1/3	0
Compulsory licensing	1/3	0
Revocation of patents	1/3	0

Overall score for patent rights index = sum of points under (1)–(5)

Applications

Previous studies have empirically examined the effects of patent protection on innovation, technology transfer, and productivity growth, controlling for other factors. These studies included analyses of the impacts of IP rights on technology transfer and foreign direct investment (Branstetter, Fisman and Foley, 2006) and impacts on innovation and growth performance (Chen and Puttitanun, 2005; Schneider, 2005. Other studies have looked at the question how different country characteristics shape the development of IP rights (Ginarte and Park, 1997).

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