

TECHNOLOGY TRANSFER IN INDONESIA: LEGAL PERSPECTIVE¹

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Abstract

This study aimed to analyse technology transfer in Indonesia. As we have indicated, Indonesian Patents Law, No. 14 of 2001, have failed to create technology transfer for Indonesia. Even though the transfer of technology is strongly campaigned as a principal means of relieving world poverty, there is no reliable and credible evidence that shows a significant correlation between technology transfer under the patent regime and the collective mastery of a nation to access information, knowledge and technology (INT) effectively in order to improve the quality of people's lives.

Kajian ini bertujuan untuk membahas pemindahan teknologi di Indonesia. Seperti yang telah kita lihat, ketentuan Paten No. 14 Tahun 2001 ini, telah gagal melakukan pemindahan teknologi terhadap Indonesia. Sekalipun pemindahan teknologi adalah sangat kuat diserukan sebagai suatu prinsip, dengan tujuan utama mengurangi kemiskinan dunia, tidak dapat dipercayai dan tidak ada bukti yang menunjukkan satu kaitan yang kuat antara pemindahan teknologi di bawah aturan paten dan penguasaan bersama dari suatu bangsa untuk mendapatkan informasi, pengetahuan dan teknologi efektif guna meningkatkan kualitas dari kehidupan rakyat.

Keywords: Sistem paten, pemindahan teknologi.

Introduction

In Indonesia, a patent is a temporary monopoly granted by the State in respect of an invention. The owner of a patent, the patentee, shall

¹ Please see Abd Thalib's Ph. D. Thesis (2012), "Pemindahan Teknologi di Indonesia: Kajian Perundangan", Fakultas Undang-Undang, Universiti Malaya, pp. 128-193.

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have exclusive rights and monopoly to exploit or use commercially his patent individually or by giving his consent to other persons to make, sell, lease, deliver, use, supply for sale or lease or delivery of the products for which patent has been granted.² He may transfer any one or more of these rights either wholly or partly to any other person.³ He can also licence its use on his freedom to deal with the patent completely as he wishes.⁴ It is different with some fields of property however, there are certain limitations on his freedom to deal with the patent completely as he wishes.

Apart from these rights, the patent holder shall be obliged to use his patent within the territory of the Republic of Indonesia.⁵

Patent holder shall mean an inventor as the owner of patent or a recipient of such right from the owner of a patent or subsequent recipient of patent from the person mentioned above who is registered in the General Register of Patents.⁶

The Directorate General shall conduct the administration of patents as regulated under this law due regard to the authority of the agencies as regulated under this law.⁷ The Directorate General shall organize the documentation and patent information service by the establishing a national patent documentation system and information network capable of providing information to the public regarding patented technology as widely as possible.⁸ In implementing the administration of patents, the Directorate General shall receive guidance from and be responsible to the minister.⁹

Among to the exclusive rights as mentioned above, the owner of the patent can also licence its use on his freedom to deal with the patent completely as he wishes. With regard to the licensing agreements need to be registered with the various branches of the Directorate General of Intellectual Property Rights and the Directorate General

² Article 16 of the Indonesian Patents Law, No. 14 of 2001.

³ Article 66 of the Patents Law, 2001.

⁴ Article 69 of the Patents Law, 2001.

⁵ Ibid.

⁶ Article 1(6) of the Patents Law, 2001.

⁷ Article 110 of the Patents Law, 2001.

⁸ Article 111 of the Patents Law, 2001.

⁹ Article 112 of the Patents Law, 2001.

may only register licences that are not harmful to the Indonesian economy and do not introduce limitations for Indonesians to master and develop technology.¹⁰ The legislation promises guidelines for this broad discretion, but since these are still missing, licensing contracts can currently be concluded, but they have no effect vis-à-vis third parties and cannot be enforced in court.¹¹

Objective of Study

- (a) Why the Indonesian patent system is not effective for the technology transfer?;
- (b) The role of Indonesian government for the technology transfer (TT).

Scope of the Study

Among many factors to assist in providing an appropriate level of transfer of technology (TT), there are in general two ways of getting foreign technology transferred to developing countries: its sale to local enterprises by licensing (patented and unpatented know-how) and its transfer by means of direct investment.

This study assesses the adequacy of TT in Indonesia not only under the statutory Patent Laws, provided by the Indonesian Patents Act 2001, but also from the government policies.

Within the confines of the Indonesian Patents Act 2001, the present study examines the specific provisions on TT under the defensive registration provision in Sections 70 and 71 of the Indonesian Patents Act.

Research Methodology

The research methodology employed in this study is predominantly library research. Relevant articles, books, local and international

¹⁰ Section 72 Patents Law, 43 (3) and (4) Trade Marks Law, 38C (2) Copyright Law, 8 Trade Secrets Law, 35 Industrial Designs Law, 27 Integrated Circuit Layout Law.

¹¹ S. Gautama and R. Winata, *Hak Atas Kekayaan Intelektual (HAKI): Peraturan Baru Desain Industri* (Intellectual Property Rights (HAKI): New Regulations on Industrial Designs), (Bandung: Penerbit PT. Citra Aditya Bakti, 2000), p. 23.

law reports, reviews, conference and seminar papers constituted the main source of information for this study.

Throughout this study, internationally reported patent agreements will be resorted to wherever possible, to explain the various aspects and the roles of TT under discussion. The extensive use of case law is necessary to provide a greater understanding of the law.

Indonesian Patents Law No. 14 of 2001

Among many factors to assist in providing an appropriate level of transfer of technology (TT) as indicated above, there are in general two ways of getting foreign technology transferred to developing countries: its sale to local enterprises by licensing (patented and unpatented know-how) and its transfer by means of direct investment.

Licences of Rights

A system of licence of right has been evolved in the patent laws of some countries to overcome the inherent deficiencies in the system of compulsory licensing. This system is also known as automatic licensing system. System of licences of right is a voluntary as well as non-voluntary restriction, on the exclusive monopoly of the patentee's right, in the public interest. Voluntary in the sense that under this system a patentee may safeguard his patent from a compulsory licence application or revocation for non-use by voluntarily applying to the patent office at any time after grant of patent to have the patent endorsed with the word "licences of right". It is non-voluntary in the sense that after the lapse of particular period (generally it is three years) from the date of grant of patent, the government can apply to the Controller to have a patent endorsed with the word "licences of right". Additionally there is also third type of this system where the endorsement of a class of patents with the words "licence of right" is made by statute itself.

Further, with regard to licence the patentee shall be entitled to give it to another person pursuant to a licence agreement.¹² The conditions

¹² Article 70 of the Patents Law, 2001.

of the licence including the amount of remuneration payable to the patentee (sometimes it is called royalties), is determined in the absence of agreement, by an authority designated by the law for this purpose. Moreover, unless otherwise agreed, a patent holder may continue to perform by himself or give a licence to any other third parties to perform the acts referred to in Article 16, which shall be effective during the term of the licence.

This system may be specially attractive to developing countries because once a patent is thrown open to licence of right, it will no longer depend on the will of the owner of the patent whether the patent will be exploited in the country, anybody can obtain a licence and on the basis of that licence work the patented invention in the country. But this system has also been criticised by saying that, “the disadvantages of this system is that prospective licensees hesitate to obtain such a non-exclusive licence since competitors can obtain the same at any time.”¹³

A licence may be expressed, implied or statutory, it may be exclusive, non-exclusive or limited. An exclusive licence is defined under Article 70. Such a licence excludes all other persons including the patentee from the right to use the invention. In a limited licence the limitation may arise as to persons, place, time, use, manufacture and sale.

An express licence is one in which the permission to use the patent is given in explicit terms. Certain presumptions as to term are provided in Article 69 (2). The licence must presumably be in writing and to be effective must be registered.¹⁴

The agreement between the parties concerned must be reduced to the form of a document embodying all the terms and conditions governing their rights and obligations. An application for registration of such document must be registered to the Directorate General of Intellectual Property Rights which shall be recorded and published, with the payment of a fee. Where a licensing agreement is not

¹³ Stephen P. Ladas, *Patents, Trademarks and Related Rights: National and International Protection*, (Cambridge: Harvard University Press, 1975), p. 429.

¹⁴ Article 72 of the Patents Law, 2001.

recorded, said licensing agreement will not have legal effects on a third party.¹⁵

Furthermore, under Article 71 however, excludes certain clauses from such licences, declaring them to be invalid. The two sorts of clauses are: (i) provision which are directly or indirectly detrimental to the Indonesian economy, and (ii) certain limitations obstructing the capability of the Indonesian people to master and develop the technology generally connected with the patented invention, and particularly the invention for which the patent has been granted.

As far as regulations system on the transfer of technology in Indonesia is concerned, apart from Patents Law, 2001 as indicated above, under Articles 11 and 12 Investment Law, No. 25 of 2007 mentioned that: *“Enterprises with foreign capital are obliged to arrange and/or to provide facilities for training and education at home or abroad for Indonesian nationals in an organised way and with a set purpose in order that the alien employees may gradually be substituted by Indonesian ones”*. In addition, the activity program may be organised by the employers or third-party services may be utilized.¹⁶ The non performance of this obligation results in employers employing foreign worker(s) to pay a compulsory educational and training contribution. Such contributions will be used to fund the Government’s manpower education and training.¹⁷ Beside it, in the oil and gas sector, contractors of oil and gas production sharing contracts are required to provide an educational and training program for all Indonesian employees.¹⁸ On this subject the Elucidation of the Oil and Gas Law No. 22 of 2001 does not give further explanation.

It should be noted however, that the General Policy towards the skill problem of Indonesian national manpower is, that efforts should be made to enhance knowledge, improve skill, augment the ability to organise and manage. In pursuance of this General Policy we may

¹⁵ Ibid.

¹⁶ Article 8 of the Presidential Decree No. 75 of 1955.

¹⁷ Minister of Manpower Regulation No. 143 A/MEN/1991 on Educational and Training Obligatory Payments.

¹⁸ Article 12 of the Government Regulation No. 35 of 1994 regarding the Requirements and Guidelines of the Cooperation of Oil and Gas Production Sharing Contract.

emphasize that within the framework of mineral oil and gas mining, the above mentioned efforts should also be made by the Government, i.e., the State Oil Enterprise.

On the one hand, these laws were intended to invite private foreign capital to be invested in projects which will contribute to the healthy development of Indonesia's economy. Pursuant to the law on industrial affairs, selection and transfer of foreign industrial technology which is strategic in nature and needed for the development of domestic industry. On the other hand, as indicated above that the licence agreement between the parties concerned must be reduced to the form of a document embodying all the terms and conditions governing their rights and obligations, hence such document must be registered to the Directorate General of Intellectual Property Rights which shall be recorded and announced, with the payment of a fee. Where a licensing agreement is not recorded, said licensing agreement will not have legal effects on a third party. Otherwise, further provisions concerning licensing agreements shall be regulated by a Government Regulation.¹⁹ In this context, in fact, unfortunately, at present, such Government Regulation is not enacted yet. It's mean, in this regard that the basic philosophy of the contractual arrangements i.e., technology transfer from foreign companies to Indonesian nationals do not effective.²⁰

The Role of Indonesian Government for Technology Transfer

The primary objective of a licensee in entering into a technology licence agreement includes the acquisition of a developed and tested industrial process without having to bear the risks, delay

¹⁹ Article 73 of the Patents Law, 2001.

²⁰ Interview's result with the Directorate General of Intellectual Property Rights (Dirjen HAKI), Jakarta, 02 March 2006, viz: "In so far , all parts of the intellectual property legislation promise more detailed guidelines to be issued as part of Government Regulations or Presidential Decrees. The problem here is that '*none of these guidelines has so far been issued*'. Implementing provisions for licensing registration are not among those provisions that the government is currently working on. As a consequence, practitioners in Indonesia have had to experience that the Directorate General of Intellectual Property Rights rejected the registration of patent licensing agreements because the applications could not be processed without those guidelines. Under these circumstances, licensing agreements can be concluded, but not be registered and as a consequence, they have no legal effect vis-à-vis third parties.

and expense of its development. For licensees in developing countries, the unavailability of facilities or resources for research and development (R&D) often renders the licensing of foreign technology rights the only means of obtaining them. Even if the licensee were to embark upon the necessary research, the risk of failure is compounded by the risk that a rival enterprise may be able to obtain industrial property protection in relation to the relevant technology. 'Licensing in' may assist a licensee after a profitable exploitation period, under the name or mark of the licensor, to aggregate the financial, technical and commercial means necessary to initiate its own research programme.

In Indonesia a major 'unpackaged' (non-equity) mode of technology transfer from advanced country firms to Indonesian firms has been technical licensing agreements (TLAs). Although no quantitative data are available on the number of these TLAs²¹, circumstantial evidence indicates that these TLAs often involve the transfer of older and mature technologies that do not offer the recipient country a long-term competitive advantage in the global market.²² However,

²¹ "In so far, all parts of the intellectual property legislation promise more detailed guidelines to be issued as part of Government Regulations or Presidential Decrees. The problem here is that *'none of these guidelines has so far been issued'*. Implementing provisions for licensing registration are not among those provisions that the government is currently working on. As a consequence, practitioners in Indonesia have had to experience that the Directorate General of Intellectual Property Rights rejected the registration of patent licensing agreements because the applications could not be processed without those guidelines. Under these circumstances, licensing agreements can be concluded, but not be registered and as a consequence, they have no legal effect vis-à-vis third parties." In this context, see Indonesian Patents Act, 2001 such as: Article 70: "Unless agreed otherwise, a patent holder shall continue to be able to personally exploit the invention or to grant a license to any other third party to perform acts as referred to in Article 16"; Article 71: "(1) A licensing agreement shall be prohibited to contain provisions that may directly or indirectly give rise to effects which damage the Indonesian economy, or to contain restrictions which obstruct the ability of the Indonesian people to master and develop technology in general and in connection with the patented invention in particular. (2) The Directorate General shall refuse any request for registration of a licensing agreement containing provisions as referred to in paragraph (1)"; Article 72: "A licensing agreement shall be recorded and announced, with the payment of a fee. (2) Where a licensing agreement is not recorded at the Directorate General as referred to in paragraph (1), said licensing agreement will not have legal effects on a third party"; Article 73: "Further provisions concerning licensing agreements shall be regulated by a Government Regulation".

²² Marks, Stephen, 1999, *Foreign Direct Investment in Indonesia and its Management through Governmental Policy*, Partnership for Economic Growth, Department for Industry and Trade, Jakarta, March, p. 6.

for a late-industrialising economy like Indonesia, acquiring and mastering these older technologies first is a good way to develop the important basic industrial technological capabilities (ITCs), namely the production, investment and adaptive capabilities. In this regard Marks, viewed as follows:

Unlike the other three ASEAN countries, Malaysia, the Philippines, and Thailand, Indonesia does not have data on the number of technology licensing agreements signed by Indonesian firms (including both domestic firms without foreign equity ownership and joint ventures with foreign investors) with their foreign licensors. Nor is there a single satisfactory definition of technology inflows, especially concerning the transfer of human capital resources. But as an approximation one can use data on royalty and licensing payments to the major technology suppliers in the Asia-Pacific region, namely the U.S. and Japan²³. For instance, in a publication of Japan's Agency of Industrial Science and Technology published in 1992 it was mentioned that out of Japan's total technology exports of yen 339.4 billion during fiscal 1990, 5.8 per cent of this total amount (yen 19.7 billion) went to Indonesia²⁴.

Imports of capital goods provide another way of acquiring the means of production without the transactional costs involved in FDI or TLAs. Capital goods imports are actually embodied technology flows entering a country. They introduce into the production processes new machinery, other capital equipment and components that incorporate technologies which do not necessarily incorporate high or frontier technologies, but are nevertheless new to the recipient firm²⁵.

²³ Hill, Hal & Johns, Brian, "The transfer of industrial technology to Western Pacific developing countries", (1983) *Prometheus*, Vol. 1, no. 1, June, p. 62.

²⁴ Agency of Industrial Science and Technology, *Trends in Principal Indicators on Research and Development Activities in Japan*, Technology Research and Information Division, General Coordination Department, (1992), Tokyo, p. 34.

²⁵ Soesastro, Hadi, "Emerging Patterns of Technology Flows in the Asia-Pacific Region; The Relevance to Indonesia", *Hill & Thee* (editors), (1998), p. 304.

These imported capital goods can be a cheap way of developing local ITCs if they can be used as models for reverse engineering to produce the machines locally. However, Indonesian firms have in general not engaged in ‘reverse engineering’ on a large scale to develop their ITCs. However, capital goods imports also contain a significant disembodied element, as the foreign suppliers of these capital goods, specifically machinery, often send technical experts to Indonesian firms to train the workers of these firms how to operate, maintain and repair the imported machinery. This kind of technology and skill transfer by technical experts from foreign firms to Indonesian employees has been quite significant for most foreign machinery suppliers. This training is crucial as the mere imports of capital goods do not automatically lead to an enhancement of local ITCs, if local employees do not know how to operate, maintain or repair the imported machinery. However, if the imports of capital goods is accompanied by the effective training of local workers on how to operate, maintain and repair the imported machinery, these imports will lead to the development of the basic production (operational) capabilities of the firms and over time also to the development of adaptive capabilities, specifically to carry out minor process adaptations.²⁶

In this regard, as far as technology transfer in Indonesia is concerned Kuroda²⁷ pointed out:

A thorough examination of the extent to which technology transfers actually take place presupposes a clarification of terminology. In the most general sense of the word, ‘technology’ is a system of production in which inputs are transformed into outputs. It includes specifications of inputs, outputs and organizational arrangements. Productive activities may be of three types: operations, improvement and innovation. The latter two can refer to both processes and products. Taken together they convey technical change. An especially important form of improvement is adaptation to local

²⁶ Thee Kian Wie, “The Major Channels of International Technology Transfer to Indonesia: An Assessment”, (2005) *Journal of the Asia-Pacific Economy*, 10, no. 2, pp. 214-36.

²⁷ See, Kuroda Akira (2001), “Technology Transfer in Asia. A Case Study of Auto Parts and Electrical Parts Industries in Thailand”. Tokyo: Maruzen Planet, pp. 38-39, 186.

conditions. Not all imported technologies are equally suited for implementation in a developing country such as Indonesia. This study therefore implicitly also addresses the question whether technologies transferred through Japanese investment are indeed the most appropriate ones for Indonesia. Transfers of technology may prove ineffective precisely because not the right kind of technology was chosen in the first place or because local absorptive capacities were inadequate.

The success of an international technology transfer is measured by the extent to which Indonesian nationals have achieved technological capability so that they can use imported or transferred technology efficiently. It is useful to distinguish between four types of industrial technological mastery²⁸:

- (a) “*Acquisitive* capability, i.e. knowledge and skills required to search, assess, negotiate and procure relevant foreign technologies as well as to install and start up the newly set-up production facilities.
- (b) *Operational* capability, i.e. knowledge and skills required for an efficient operation of the production process, including maintenance and repair of the machinery.
- (c) *Adaptive* capability, i.e. knowledge and skills required to carry out minor modifications of processes and/or products.
- (d) *Innovative* capability, i.e. knowledge and skills needed to carry out research and development (R&D) in order to make major changes in process and/or product technologies”.

The effectiveness of technology transfers is measured by scores on the development of each of these capabilities. Much of the literature applies a rather narrow conception of technology transfer stressing

²⁸ See, Sripaipan Chatr (1990)i, ‘*The Acquisition of Technological Capabilities by Thai Manufacturing Firms*’, *TDRI Newsletter* [Bangkok: Thailand Development Research Institute] 5 (3), pp. 6-11. For a slightly different formulation (acquisition – development – utilization – maintenance) see Prayoon Shiowattana, ‘Technology Transfer in Thailand’s Electronics Industry’, in: Yamashita Shoichi (ed.), *Transfer of Japanese Technology and Management to the ASEAN Countries* (Tokyo: University of Tokyo Press), 1991, pp. 169-193.

the actual transmission of skills from one individual to another. This is accomplished through training, both formal and non-formal, as well as through participation and observation while working in a foreign-controlled firm. Chief channels for such transfers are foreign direct investment and technical assistance programs under the auspices of official aid. Such a narrow conception of technology transfer has an important shortcoming as it leaves out the absorption of foreign technologies through technical licensing or use of imported machinery and equipment. In either case, there need not be any foreign equity participation or direct foreign involvement with the firm in question. A broader conception of technology transfer should incorporate also the absorption on the level of the individual firm and the diffusion of imported technology throughout industries. Both in turn are highly dependent on conditions in the receiving country, especially with regard to economic incentives and human resource development.

Japanese firms made use of their comparative advantage when making a major contribution towards building up the manufacturing sector in Indonesia during the New Order period. Yet complaints persisted that Japanese firms in Indonesia applied only outdated, labour-intensive production techniques not in vogue any more at home and that they were even less willing than Western firms to share their advanced technologies with local partners²⁹ Technological capabilities were shown to have improved more in local firms operating under technical licensing agreements (i.e. without Japanese equity participation) than in foreigncontrolled firms. A possible explanation is that a greater effort to master new technology was required in the former case³⁰.

More recent research has produced some new insights. The idea that Japanese firms are unwilling to part with their knowledge is

²⁹ One recent example of offering outdated Japanese equipment to Indonesia was the grant of 72 secondhand Japanese trains, mostly about 30 years old, by the Tokyo metropolitan government to the Jakarta metropolitan transport authority in May 2000 but it must, of course, be remembered that this equipment was provided for free. More detail See, Kompas, 20 January 1994; Yamashita Shoichi, *The Role of Foreign Direct Investment and Technology Transfer*, (Hiroshima: Hiroshima University Press, 1992), p. 6.

³⁰ Thee Kian Wie, 'Indonesia: Technology Transfer in the Manufacturing Industry', in: Hadi Soesastro and Mari Pangestu (eds), *Technological Challenge in the Asia-Pacific Economy* (Sydney: Allen & Unwin, 1990), pp. 200-232.

refuted by empirical evidence on the numerous opportunities for training of Indonesian personnel offered by Japanese firms.³¹ The higher productivity in manufacturing branches with a strong foreign presence was taken as an indication of technological spillovers from foreign-controlled to domestic firms within the same line of production³². There was ample evidence of successful but limited transfers of technology in export-oriented firms in a number of industries such as textiles, garments and electronics. Operational capabilities in particular had by and large been acquired by domestic firms whereas innovative capabilities still remained beyond reach³³. An in-depth study of the implementation of Toyota's production system (TPS), in the assembly lines of Toyota-Astra in Jakarta showed that operational and adaptive capabilities, including some process design, had been successfully transferred to the Indonesian personnel³⁴. The need to improve the image of Japanese firms as motors of Indonesian industrialization even surfaced in the daily press, for instance in 1997 when a Sumitomo-NEC combination announced plans for investment in a semiconductor plant in Bekasi near Jakarta while pledging to contribute to technological progress³⁵. Such public statements underscore the relevance of a study as the present one.

Conclusion

As we have seen above, nor Indonesian patents system, neither the role of government effective for the technology transfer in Indonesia. At present, as far as transfer of technology is concerned, no specific regulations on the transfer of technology have been issued. Beside it there is still relatively little pressure on industrial firms to invest

³¹ Thee Kian Wie, 'Technology Transfer from Japan to Indonesia', in: Yamada Keiji (ed.), *The Transfer of Science and Technology between Europe and Asia, 1780-1880* (Kyoto: International Research Center for Japanese Studies, 1994), pp. 53-54.

³² Sjöholm, Fredrik, 'Joint Ventures, Technology Transfer and Spillovers: Evidence from Indonesian Establishment Data', paper presented at the Second International Symposium on Foreign Direct Investment in East Asia, Tokyo (1998), pp. 22-23.

³³ Thee Kian Wie and Mari Pangestu, 'Technological Capabilities and Indonesia's Manufactured Exports', in: D. Ernst, L. Ganiatsos and T. Mytelka (eds), *Technological Capabilities and Export Success in Asia* (London/New York: Routledge, 1998), pp. 211-265.

³⁴ Nakamura Keisuke and Padang Wicaksono, "*Toyota in Indonesia. A Case Study on the Transfer of the TPS*" (Jakarta: Center for Japanese Studies, University of Indonesia, 1999)

³⁵ Jakarta Post, 11 June 1997.

in technological activity. Trade and ownership restrictions, backed by market power in the hands of large domestic conglomerates, hold back technological activity, not just by the firms that enjoy privileges but also by those that are relatively deprived. Some policies conflict with each other. Some are geared to meeting the needs of special sections of industry, while others are deficient in addressing the needs they are supposed to meet. Responsibility for policies is spread over different agencies, with little effective coordination, and sometimes active rivalry.

The pattern of inward technology flows for Indonesia seems to be dominated by the use of FDI as the main channel for technology acquisition. In some sense this has been the country's implicit 'technology policy', and the favourable attitude of the government towards FDI has been based to a large extent on the promise of technology that will be brought in as part of the investment package. The government has attempted to use some performance requirements in its foreign investment regulations to effect more rapid transfers of technology. The regulations have been weak or have not enforced, and no specific incentives have been given to encourage FDI that will upgrade local technological capabilities.

Suggestions

From time to time there have been calls for government regulation of technology transfer agreements on the grounds that foreign licensors (technology suppliers) may impose 'unfair' restrictions and conditions in such agreements, and that Indonesian firms lack commercial experience in these matters in negotiating with foreign firms, particularly the transnational corporations (TNCs). Hence, government intervention could increase the bargaining power of the local recipients (the Indonesian firms) in their negotiations with the prospective technology suppliers (the foreign firms).

Despite these suggestions, successive Indonesian governments have thus far not indicated any interest in changing the country's liberal technology import regime. There are strong arguments for

continuing this stance, as government intervention in negotiations between prospective foreign technology suppliers and Indonesian technology buyers, particularly by attempting to eliminate or reduce what it perceives to be unduly restrictive conditions in technology licensing agreements, might very well slow down the inflow of new FDI, and the accompanying important inflow of technology imports, particularly now that new FDI inflows and the related technology inflows are needed more than ever to revive the Indonesian economy.

Another argument against government intervention in negotiations on technical licensing agreements is that Indonesian government officials in general, like government officials elsewhere, do not have the necessary business experience or knowledge about industrial technologies to make informed decisions on the appropriate levels and forms of royalty payments. While royalty payments can often be quite high, restrictions on the amount of royalty payments could lead foreign licensors to circumvent them by resorting to other means, for instance ‘transfer payments’, to obtain what they felt was the right amount of royalty payments.

References

- Agency of Industrial Science and Technology (1992), “*Trends in Principal Indicators on Research and Development Activities in Japan*”, Technology Research and Information Division, General Coordination Department, Tokyo.
- Government Regulation No. 35 of 1994 regarding the Requirements and Guidelines of the Cooperation of Oil and Gas Production Sharing Contract.
- Minister of Manpower Regulation No. 143 A/MEN/1991 on Educational and Training Obligatory Payments.
- Kuroda Akira, *Technology Transfer in Asia. A Case Study of Auto Parts and Electrical Parts Industries in Thailand* (Tokyo: Maruzen Planet. (2001).
- Marks, Stephen, *Foreign Direct Investment in Indonesia and its Management through Governmental Policy*, Partnership

for Economic Growth, Department for Industry and Trade, (1999), Jakarta.

Nakamura Keisuke and Padang Wicaksono, *Toyota in Indonesia. A Case Study on the Transfer of the TPS*, (Jakarta: Center for Japanese Studies, University of Indonesia, 1999).

S. Gautama and R. Winata, *Hak Atas Kekayaan Intelektual (HAKI): Peraturan Baru Desain Industri (Intellectual Property Rights (HAKI): New Regulations on Industrial Designs)*, (Bandung : Penerbit PT. Citra Aditya Bakti, 2000).

Sjöholm, Fredrik, 'Joint Ventures, Technology Transfer and Spillovers: Evidence from Indonesian Establishment Data', paper presented at the Second International Symposium on Foreign Direct Investment in East Asia, Tokyo, 1998.

Soesastro, Hadi, *Emerging Patterns of Technology Flows in the Asia-Pacific Region; The Relevance to Indonesia*", in: Hill & Thee ed. (1998).

Sripaipan Chatr (1990), 'The Acquisition of Technological Capabilities by Thai Manufacturing Firms', *TDRI Newsletter* [Bangkok: Thailand Development Research Institute] 5 (3), pp. 6-11. For a slightly different formulation (acquisition – development – utilization – maintenance) see Prayoon Shio Wattana, 'Technology Transfer in Thailand's Electronics Industry', in: Yamashita Shoichi (ed.), *Transfer of Japanese Technology and Management to the ASEAN Countries* (Tokyo: University of Tokyo Press), 1991.

Stephen, P. Ladas, *Patents, Trademarks and Related Rights: National and International Protection* (Harvard University Press, Cambridge, 1975).

----- 'Technology Transfer from Japan to Indonesia', in: Yamada Keiji (ed.), *The Transfer of Science and Technology between Europe and Asia, 1780-1880* (Kyoto: International Research Center for Japanese Studies, 1994).

----- `Indonesia: Technology Transfer in the Manufacturing Industry', in: Hadi Soesastro and Mari Pangestu (eds), *Technological Challenge in the Asia-Pacific Economy* (Sydney: Allen & Unwin, 1990).

Thee Kian Wie and Mari Pangestu, 'Technological Capabilities and Indonesia's Manufactured Exports', in: D. Ernst, L. Ganiatsos and T. Mytelka (eds), *Technological Capabilities and Export Success in Asia* (London/New York: Routledge, 1998).

Hill, Hal & Johns, Brian, "The transfer of industrial technology to Western Pacific developing countries", (1983), *Prometheus*, 1, no. 1, June.

Jakarta Post, 11 June 1997.

Thee KianWie, "The Major Channels of International Technology Transfer to Indonesia: An Assessment", (2005) *Journal of the Asia-Pacific Economy*, 10, no. 2.