

**A CRITICAL ANALYSIS OF FOREIGN DIRECT INVESTMENT AS A VEHICLE
FOR TECHNOLOGY TRANSFER TO DEVELOPING COUNTRIES:**

A CASE STUDY OF ZAMBIA

By

GONDWE ALICK

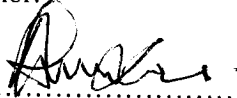
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Being a Directed Research Essay Submitted to the University of Zambia Law Faculty in

Partial fulfillment of the requirements for the Award of the Bachelor of Laws (LLB) Degree.

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I, **GONDWE ALICK**, do hereby declare that this Directed Research Essay represents my own original work and to the best of my knowledge, information and belief, no similar piece of work has previously been submitted at the University of Zambia or any other Institution for the award of Bachelor of Laws Degree. All other works in this essay have been duly acknowledged. No part of this work may be reproduced or copied in any manner without the prior authorization in writing of the author.

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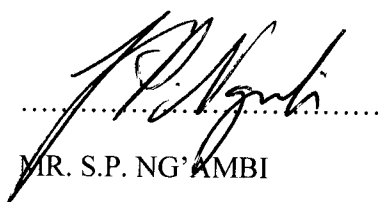
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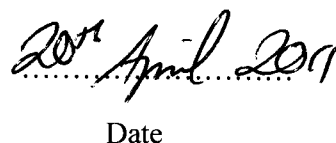
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ABSTRACT

This essay surveys the issues raised by technology transfer to developing countries through Foreign Direct Investment. The argument for foreign investment as a vehicle for technology transfer is the dual role that the investment plays. Apart from providing capital for investment which is in short supply in developing countries, the investment brings with it the know-how necessary for the success of the investment. Particularly, it is noted that multinational firms are well suited for this role because of their ready resources, easy mobility, abundant trained personnel and wide experience derived from the many countries in which they do business.

Technology is a vital part of the development process, a necessary input into all activity. Because of the historical domination of research and development by developed countries, a very large part of the technology used is transferred from developed to developing countries. The transfer raises four major issues: those of the cost of the transfer, the appropriateness of products and techniques which are transferred, the effects of the transfer on learning and technological development in LDCs, and the effects on independence. This essay considers the consequences of the transfer and the range of policies that might be adopted, nationally and internationally, in relation to each of these issues.

It is argued that the appropriate policies will vary according to the stage of development of each country, its technological capacity and its own objectives. However, in general it is concluded that an active technology policy is called for if the costs associated with technology transfer are to be reduced and the benefits increased. While it is easy to design suitable policies on paper, it is much more difficult to ensure that they are effective in practice. It is in this light that this essay endeavours to offer a critical analysis of Foreign Direct Investment as a vehicle for technology transfer to developing countries with particular emphasis on Zambia.

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I acknowledge my friends M'son Robini, Mwaba Mulawo and all those I have not mentioned.

DEDICATION

This work is dedicated to my Mom and Dad, Tobias Gondwe and Margaret Munthali. It is also dedicated to my grand parents, Youngson Munthali (late) and Esnat Evelyn Kaonga without whose help this work would never have been written. You took care of me and did everything possible within your strength to see me rise above my challenges and circumstances. I will never forget your love. To me you are the greatest.

LIST OF ACRONYMS

ACP	African Caribbean and Pacific Countries
BIT	Bilateral Investment Treaty
COMESA	Common Market for Eastern and Southern Africa
DCs	Developed Countries
DTT	Double Taxation Treaty
FDI	Foreign Direct Investment
ICSID	International Centre for Settlement of Investment Disputes
IMF	International Monetary Fund
LUSE	Lusaka Stock Exchange
MIGA	Multilateral Investment Guarantee Agency
MNC	Multinational Corporation
PACRA	Patents and Companies Registration Agency
RTIOS	Regional Technology Information Office
SME	Small and Medium-Sized Enterprises
TNC	Transnational Corporation
USAID	United States Agency for International Development
WTO	World Trade Organisation
ZAMTEL	Zambia Telecommunication
ZCCM	Zambia Consolidated Copper Mines
ZDA	Zambia Development Agency
ZEGA	Zambia Export Growers' Association
ZICTA	Zambia Information, Communication and Technology Authority

LIST OF STATUTES

Ghana's Investment Promotion Centre Act 1994

The Arbitration Act No 19 of 2000

The Customs and Excise Act, Chapter 322 of the Laws of Zambia

The Foreign Exchange Control Act 1965 (repealed)

The Income Tax Act, Chapter 223 of the Laws of Zambia

The Investment Act 1986

The Investment Act 1991 (repealed)

The Investment Act 1993 (repealed)

The Patents Act, Chapter 400 of the Laws of Zambia

The Trade Marks Act, Chapter 401 of the Laws of Zambia

The U.S. Immigration Act of 1965

The Value Added Tax Act Chapter 331 of the Laws of Zambia

The Zambia Development Agency (Amendment) Act, 2009

The Zambia Development Agency Act No 6 of 2006

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CHAPTER ONE

FOREIGN DIRECT INVESTMENT AND TECHNOLOGY TRANSFER

1.1 Introduction

Zambia like many other Developing Countries regards Foreign Direct Investment FDI as one of the main means of securing the much needed technology. In concerted efforts to acquire technology through FDI, most developing Countries have introduced deliberate policies to encourage FDI by offering attractive incentives to investors with the motive of benefiting economically and in many other ways. There is considerable evidence that FDI can influence growth and development by complementing domestic investment and by undertaking trade and transfer of knowledge and technology. As a result of the immense important role that FDI plays in accelerating economic growth and technology transfer, many developing countries and Africa in particular seek such investment in order to boost their development efforts¹.

Particularly, Foreign Direct Investment is important to the future of development of Zambia, as it is a means of increasing the capital available for investment and the economic growth needed to reduce poverty and raise living standards in the country. In addition, it can contribute to sustainable economic development, as it can result in the transfer of new technologies, skills and production methods, provide access to international markets, enhance efficiency of resource use, reduce waste and pollution, increase product diversity and generate employment. However, in the absence of regulations governing natural resource extraction, or when they are weak or poorly enforced, increased openness to foreign investment can accelerate unsustainable resource use patterns. The ability of developing countries to attract FDI, maximise the associated benefits and minimise the risks depends on the effectiveness of their policy and institutional frameworks.²

Be that as it may, the role that FDI plays in accelerating growth and sustainable technology transfer to developing countries has never been substantiated³. It is against this background that this obligatory essay seeks to explore and examine whether or not Zambia's economy is really enjoying the benefits of technology transfer that comes with Foreign Direct Investment

¹ G. Schwarznberger, Foreign Investment and International Law, Stevens and Sons, London, 1969, page 9.

² M. Sornarajah, The International Law on Foreign Direct Investment, 2nd Ed. Cambridge University Press, Cambridge, 2009. page 8

³ K.K. Mwenda, Contemporary Issues in Corporate Finance and Investment Law, Penn Press, Washington, 2000. page 20.

and ultimately leading to economic growth. In this regard the paper will look at the fiscal incentives and attraction of FDI, the laws and policies that investors are subjected to and all the laws relating to the promotion of technology transfer in Zambia. After an exposition of the above factors, the paper will proceed to analyze the laws alluded to above and suggest either their review or amendment in order to align them with the current economic and development needs.

1.2 Statement of the Problem

It is often argued that FDI plays a significantly prominent role in international technology transfer especially from Developed Countries DCs to developing countries. This paper surveys the issues raised by technology transfer from developed countries to developing countries through FDI. Technology is a vital part of the development process, a necessary input into all activity. Because of the historical domination of research and development by developed countries, a very large part of the technology used is transferred from developed countries through FDI to developing countries. The transfer raises four major issues:

- (a) The cost of the transfer of technology to developing countries.
- (b) The appropriateness of the products and techniques which are transferred.
- (c) The effects of the transfer on learning and technological development in developing countries and,
- (d) The effects of the transfer of technology on independence.

This paper considers the consequences of the transfer and the range of policies that might be adopted nationally and internationally, in relation to each of these issues.

It is argued that the appropriate policies will vary according to the stage of development of each country, its technological capacity and its own objectives.⁴ However, in general terms it is concluded that an appropriate technology policy is called for if the costs associated with technology transfer are to be reduced and benefits increased. While it is easy to design suitable policies on paper, it is much more difficult to ensure that they are effective in practice. These among other issues are what this research paper will undertake to examine.

⁴ F. Sagasti, Science and Technology for Development: Main Comparative Report of the Science and Technology Implements Project, I.R.D.C. 1978.

1.3 Rationale and Justification

Technology is defined as knowledge of how to do and make useful things.⁵ At the heart of any form of economic activity from the least to the most sophisticated lies the technology or knowledge of how the activity is carried out. Before initiating any economic activity then the first prerequisite is the acquisition of this knowledge. But technology is not randomly and freely distributed throughout the world as would appear from some economists' models. Rather it has been commercialised and as part of the process of historical development, the development of technology has been heavily concentrated in certain parts of the world, notably the developed countries.⁶

Moreover, much of this technology has been commercialised with proprietary rights acquired in it so that it is not freely transferred but is sold commercially. The international transfer through Foreign Direct Investment in many cases and also the international sale of technology is thus an essential precondition for economic development. Since technology changes continuously, with new or improved products, new materials or new uses of old materials, and new techniques of production, the need to acquire technology is not once for all, but a continuing one. Thus the question of technology transfer, how it is transferred, the terms of transfer and the effects of transfer is at least as critical to economic development as the question of transfer of capital resources. In recent years this fact has been widely recognised as shown by many international conferences and resolutions on the subject. This paper attempts to examine and summarise the main issues that arise in connection with the international transfer of technology through FDI to developing countries.

what is the main statement of the problem?

1.4 The Objectives of the Study

1. To critically examine the role of Foreign Direct Investment in international technology transfer to developing countries.
2. To review government policies towards promotion of Foreign Direct Investment in a bid to acquire foreign technology.
3. To highlight the inherent problems in the transfer of technology to developing countries.
4. To establish the effectiveness of the regulation of the transfer of foreign technology to developing countries.
5. To review legislation relating to the transfer of technology in Zambia.

⁵ F. Stewart, International Technology Transfer: Issues and Policy Options, Butterworths, London, 1979, page 9.

⁶ United Nations Conference on Trade and Development, World Investment Report 1999.

1.5 Research Questions

1. What is the role of Foreign Direct Investment in international technology transfer to developing countries?
2. What is the government's policy towards promotion of Foreign Direct Investment as a vehicle for technology transfer?
3. What are the major inherent problems in the transfer of technology to developing countries?
4. How effective is the regulation of the transfer of technology to developing countries?
5. How effective is the legislation relating to technology transfer in Zambia?

1.6 Methodology

This research is a qualitative one and the major method of data collection employed is desk research. Where necessary, this is supplemented by interviews with various personnel from the Zambia Development Agency, Ministry of Commerce, Trade and Industry, Zambia Information, Communication and Technology Authority and other agencies. The data for this research is sourced from books, the internet, journal articles, paper presentations, students' obligatory essays, reports by mandated bodies and in a few and necessary cases, newspaper articles.

1.7 UNDERSTANDING THE CONCEPTS OF FOREIGN DIRECT INVESTMENT AND TECHNOLOGY TRANSFER

1.7.1 What is Foreign Direct Investment?

From the onset it is imperative to fully understand what FDI is. The term Foreign Direct Investment has defied a singular definition but many of the definitions share common characteristics. One such definition is that contained in the Encyclopaedia of Public International Law,⁷ where Foreign Direct Investment is defined as “a transfer of funds or materials from one country called capital exporting country to another country called host country in return for a direct or indirect participation in the earnings of that enterprise.” It is

⁷ Encyclopaedia of Public International Law (vol. 8, p. 246).

submitted that the difficulty with this definition is that it is broad enough to include portfolio investment.

The IMF, Balance of Payments Manual⁸, uses a narrower definition which excludes portfolio investment. It defines Foreign Direct Investment as ‘investment that is made to acquire a lasting interest in an enterprise operating in an economy other than that of an investor, the investor’s purpose being to have an effective choice in the management of the enterprise. Additionally, the World Trade Organisation WTO says Foreign Direct Investment occurs when “an investor based in one country, the home country acquires an asset in another country, the host country with the intent to manage that asset”⁹. There are therefore, two elements to Foreign Direct investment; acquisition of an asset and management.

Zambia has many attributes to attract FDI. It is a mining economy with decades of experience in mining-related activities. The quality of its mineral resources is equivalent, if not better than those found in many successful mining economies. Recent export trends, mainly spearheaded by FDI, also demonstrate the great potential and scope that exist in Zambia for deepening investment in non-traditional export sectors such as vegetables and flowers and non-copper mining. The prospects for investment in higher value added activities in mining, services and agriculture are also immense. Zambia has also underutilised rural resources, including unspoiled wilderness areas for tourism, which, if properly exploited, could help attract considerable amounts of FDI. Export potential is also enhanced by regional trading arrangements and privileged market access opportunities granted by developed countries.¹⁰

With the opening up of the Zambian economy in the 1990s, FDI inflows increased considerably reaching \$334 million in 2004. This was largely explained by the implementation of an ambitious privatization programme (1994-2001), investments in copper and cobalt extraction, and greenfield investments in the agricultural sector, in particular horticulture and floriculture production, and in tourism. The immediate challenge for Zambia will be to increase and sustain FDI inflows beyond recent levels, and to reap greater benefits from FDI for diversification, industrialization and development.¹¹

No conclusion

⁸ International Monetary Fund, Balance of Payments Manual, 5th Edition. Washington, D.C. 1993

⁹ UNCTAD, Investment Policy Review of Zambia, United Nations Publications, Switzerland, 2007. Page 3

¹⁰ UNCTAD, Investment Policy Review of Zambia. Page 3

¹¹ UN Economic Commission for Europe, Factors of Growth and Investment Policies: An International Approach, Oxford Pergamon, 1978. Page 82

1.7.2 The Commercial Transfer and Acquisition of Technology

The broad meaning attached to the term “technology” is in itself an important factor in explaining the reasons why there are various types of technology transfer through Foreign Direct Investment. These forms of technology transfer include conventional trade of capital goods, conventional trade of patents and licenses and the establishment of firms abroad.¹² In this chapter, the study will look at technology transfer in a generic sense. While the term technology encompasses issues such as managerial skill, know-how, production techniques, machinery, information and other intangible forms of capital, it is argued that the term “technology transfer” must be understood as the process through which superior technological knowledge of one trading partner is transmitted to the geographical location of another partner. Multinational Corporations are usually the main transmitters of such technology. As Dickens observes:

Each of the modes of foreign involvement, foreign direct investment, collaborative ventures, international subcontracting is a potential channel for technology transfer. Simply by locating some of its operations outside its home country the TNC (or MNC) engages in the geographical transfer of technology.¹³

1.8 Impact of Foreign Direct Investment

1.8.1 Technology and Skills Transfer

In addition to capital, FDI inflows in the past decade have brought some technology and know-how. FDI has also contributed modestly to diversifying exports and modernizing services, notably in telecommunications and tourism. However, FDI has yet to contribute significantly to the development of stronger business relationships with domestic enterprises, which is an essential condition for sustained transfer of skills and technological capability. FDI's strongest impact has been in transferring skills and knowledge in the horticulture and tourism sectors. In horticulture, foreign investors have introduced new varieties of flowers,

¹² UN Economic Commission for Europe page 84.

¹³ P. Dickens, Global Shift: The Internationalisation of Economic Activity, Paul Chapman Ltd, London, 1992.

and vegetables, and made local farmers more familiar with the use of new pest control methods and irrigation.¹⁴

Many Zambians occupy managerial positions and are continually trained in quality control and agricultural science essential for fruits, flowers and vegetables grown for export. Non-managerial staff receives training at agricultural colleges. The Natural Resource Development College/Zambia Export Growers' Association NRDC/ZEGA Training Institute was set up by exporters, most of them foreign firms in partnership with the government of Zambia. This trust educates farmers on the safe use of agricultural chemicals, pesticides and herbicides, and on personal and consumer safety. There is particular emphasis on environmental and social aspects of production.¹⁵

In the hospitality business, the entry of a number of international hotel groups brought with it an increase in services and quality in hotel management. Employees have been retrained since the takeover and are now performing at international standards. They also benefit from ongoing staff training programmes and the use of modern reservations systems and marketing techniques.

1.8.2 Technology Transfer Mechanisms

Generally, much technology is transferred informally through reading books, journals, sales literature, through personal contacts in meetings and conferences and through movement of trained people from one job to another. Within more formal categories of transfer, a distinction has been made between direct and indirect mechanisms. Direct mechanisms are those used when the recipient enterprises are in direct contact with the suppliers of technology; indirect transfer occurs when a company in an advanced country plays an intermediary role in packaging the technology for the developed country.¹⁶

It is submitted that the sale and purchase of the exclusive rights to a patented invention or of the permission to use the invention or of the know-how, takes place through legal relationships between the owner of the exclusive rights or the supplier of the know-how, called the transferor and the person or legal entity which acquires those rights or that permission or

¹⁴ Ministry of Tourism, as reported in the Zambia Poverty Reduction Strategy Paper, 2000

¹⁵ A statement by the Zambian Minister of Tourism, Environment and Natural Resources during the launching of Visit Zambia 2005 campaign on 8 November 2004

¹⁶ G.T. Nankani, *The Intercountry Distribution of Direct Foreign Investment in Manufacturing*, New York and London: Garland Publishing Inc. 1979. page 46.

receives that know-how, called the transferee. Those legal relationships are essentially contractual in nature, which means that the transferor of the technology consents to transfer and the transferee consents to acquire the rights, the permission or the know-how in question. There are a number of principal legal methods that can be used to bring about a commercial transfer and acquisition of technology these are as follow:

1.8.3 The Sale: Assignment

The first legal method is the sale by the owner of all his or its exclusive rights in a patented invention and the purchase of those rights by another person or legal entity. When all the exclusive rights to a patented invention are transferred without any restriction in time or other condition, by the owner of the patented invention to another person or legal entity, it is said that an “assignment” of such rights has taken place. That concept of assignment is recognised in the laws of many countries. It applies also to the exclusive rights in utility models, industrial designs and trademarks, as well as other objects of industrial property.

The legal act whereby the owner of the patented invention transfers those rights to another is evidenced by writing in the form of a legal document generally referred to as an “instrument of assignment of patent rights” or “assignment of patent rights” or, more simply yet, as an “assignment.” The transferor is called the “assignor” and the other person or entity, the transferee, is called the “assignee.” When an assignment takes place, the assignor no longer has any rights in the patented invention. The assignee becomes the new owner of the patented invention and is entitled to exercise all the exclusive rights in the patented invention.¹⁷

1.8.4 Sale and Import of Capital Goods

The commercial transfer and acquisition of technology can take place with the sale, purchase and import of equipment and other capital goods. Examples of capital equipment are machinery and tools needed for the manufacture of products or the application of a process. Raw materials, for example, crude oil or phosphoric acid, can also be considered as capital goods in that although they are products in themselves, they may be necessary for the manufacture of another products, such as gasoline or fertilizer, respectively. So also, intermediate goods, such as cotton or polyester fiber, or woven cloth and leather, which is to

¹⁷ J.W. Markham , Industrial Organisation and Economic Development, Houghton Mifflin Company, New York, 1970. page34.

be cut and sewn into clothing, and parts or other components such as tyres, batteries, radiators and engines, which are to be assembled into an automobile, may be regarded as capital goods in that they are needed in the manufacture of other products. Such sales and purchases of capital goods and their import into the country can be considered, in a sense, technology transfer transactions.¹⁸

1.8.5 The Consultancy Arrangement

The help of an individual consultant or a firm of consultants that will give advice and render other services concerning the planning for, and the actual acquisition of a given technology can be useful, if not indispensable, for such enterprises, entities and governments that wish to acquire technology from enterprises in other countries. In such a business arrangement not only is help received in acquiring the technology but the experience gained and the lessons learned in engaging and working with the individual consultant or firm of consultants will be valuable knowledge that can serve to better carry out future projects. As regards planning, the advice or services may relate to the choice of the product to be manufactured or improved upon and the technology to be used, to the investment required, to the type of business organisation or other relationships to be established, and to the suitability of each for the objective or objectives to be attained.¹⁹

The consultancy services might extend also to the implementation of a project. Design and engineering services are a typical example. Such services concern the preparation of the plan for the site of the plant, the design of the factory building, the design of machinery and other equipment, the preparation of tender documents for the construction of the building or the equipment and for civil engineering work, the evaluation of bids and advice on the award of contracts, the supervision of the construction of the factory, including the installation of the equipment, the supervision of the start-up and testing of the equipment and making findings on the state of performance of the process utilised, as well as giving advice in the initial period on the operation of particular equipment or the entire factory.²⁰ One or more individual consultants or firms of consultants might be engaged to render the services in question. Usually, however, such an individual or firm specialises in a particular type of

¹⁸ J.H. Dunning, *Studies in International Investment*, George Allen and Unwin Ltd, London, 1970, page 32

¹⁹ IBRD, *Private Foreign Direct Investment in Developing Countries*, Working Paper No.149: 1973. Page 63

²⁰ M. Snaders, *Private Foreign Investment in Developing Countries*, Reidel Ltd, Dordrecht, 1974. Page 36

service, such as investment planning, design and engineering, environmental impact, marketing or business organisation and management. In a sense, the consultancy services are forms of know-how. They can thus be considered within the framework of the know-how contract, more particularly, the technical services contract or agreement.

1.8.6 Franchising and Distributorship

Commercial transfer of technology may also take place in connection with the system of the franchising or distributorship of goods and services. A franchise or distributorship is a business arrangement whereby the reputation, technical information and expertise of one party are combined with the investment of another party for the purpose of selling goods or rendering services directly to the consumer. The goods in question may be durable, as in the case of automobiles or home appliances. They may be consumable in use, as, for example, prepared food or beverages. The services may extend to the rental of capital equipment, for example, automobiles, trucks or other power equipment, or to hotel operations, or dry cleaning facilities, or secretarial help.²¹

The outlet for the marketing of such goods and services is usually based on a trade mark or service mark or a trade name and a special décor (the “look”) or design of the premises. The licence of such a mark or name by its owner is normally combined with the supply by that owner of know-how in some form of technical information, technical services, technical assistance or management services concerning production, marketing, maintenance and administration. The owner of such a mark or trade name and know-how is called a “franchisor” or “licensor.” The party to whom the license is granted and the know-how is supplied is called the “franchisee,” “distributor” or “dealer.” The franchisee, distributor or dealer may own the premises or contribute money and time as an investment in the business firm.²²

²¹ W. Abdalla, *International Transfer Pricing Policies: Decision Making Guidelines for Multinational Companies*, Connecticut: Quorum Books, 1989. Page 11

²² D. Lal, *Development Economics*, Edward Elgar Publishing Company, Vermont, 1992. Page 32.

1.8.7 The Turn-Key Project

In certain instances, two or more of the business arrangements, and hence the legal methods that they reflect, can be combined in such a way as to entrust the planning, construction and operation of a factory to a single technology supplier, or to a very limited number of technology suppliers. Thus, the “turn-key project” may involve a comprehensive arrangement of certain legal methods, whereby one party undertakes to hand over to his client the technology recipient, an entire industrial plant that is capable of operating in accordance with agreed performance standards.

More usually, the turn-key project involves the undertaking by one party to supply to the client the design for the industrial plant and the technical information on its operation. In the latter event, supplementary arrangements might also be made for the acquisition of rights to the technology, for civil engineering work and for provision of technical services and assistance concerning the construction of the plant, the purchase and installation of equipment, raw materials or parts and components, training and supervision of the operation of the plant, at least in its initial stages.²³

It is called a “turn-key” project because the end result is to “turn” over to the client the “key” to the door of the industrial plant. That is a symbolic way of expressing the completion of the tasks agreed to between the parties. Both the consultancy arrangement and the turn-key project arrangement have their shortcomings. The first does not usually entail the responsibility of the consultant for the results. In the second, the technology supplier or suppliers are so responsible. Neither the first nor the second provides means for a continuing involvement of the technology supplier so that access to later advances in its technology can be more readily facilitated. This is because neither contains a commitment to the technology acquirer to provide further advice or services or to provide improved or additional technology. Neither contains measures to provide money or other resources that may be needed for further growth.

²³Organisation for Economic Co-Operation and Development, Foreign Direct Investment for Development: Maximising Benefits Minimizing Costs, OECD Publication Service, Paris, 2002 page 13.

1.8 Conclusion

This chapter has explored the definitions of FDI and technology transfer including the various mechanisms through which technology is transferred in a generic sense. FDI is a key ingredient for successful economic growth in developing countries. This is because the very essence of economic development is the rapid and efficient transfer of technology and adoption of best practices across borders. FDI is particularly well suited to effect this and translate into broad-based growth. It has been shown that the nature of transfer mechanism adopted varies with the industry.

CHAPTER TWO

POLICIES TOWARDS PROMOTION OF FOREIGN DIRECT INVESTMENT

2.1 Introduction

Chapter I has explored the various definitions of FDI and technology transfer including the various mechanisms through which technology is transferred in a generic sense. From the onset, it must be appreciated that a study of the subject of technology transfer through FDI would not be complete without the consideration of the policy, legislative and fiscal incentives that have been put in place to attract foreign investment which in turn acts as a vehicle for technology transfer. This is so because in this context before technology can be transferred, investment must be acquired first. As such a consideration of measures adopted to attract foreign investment is critical to this study since the acquisition of investment is as important as the aspect of technology transfer itself.

This chapter examines the policies and fiscal incentives that have been adopted to attract Foreign Direct Investment in order to foster technology transfer. Furthermore, it analyses the Investment Codes which are laws that seek to present in one piece of legislation the basic provisions aimed at promoting investment in the country concerned. Most developing countries have them. The chapter also considers the shift in policy from nationalisation of the economy to that of liberalisation which substantially led to an increase in foreign investments in Zambia.

2.2 Fiscal Incentives and Attraction of Foreign Investment

At the outset, it must be pointed out that customary international law recognises the sovereign right of each state to tax aliens resident or owning property within its territory. However, the establishment of unfair tax discrimination against foreign nationals and their property is regarded in international practice as an unfriendly act which may give rise to protest or retaliation by restoration. What has not been subjected to legal test, however, is the issue of tax discrimination which favours aliens and operates against indigenous persons. As a result of this gap in jurisprudence, the leaders of a number of developing countries recognise the

need to exploit the above sovereign right in international law in order to attract foreign investors through lofty fiscal incentives.²⁴

In pursuance of this effort, a number of governments in developing countries have enacted legislation which offers generous fiscal incentives to foreign investors. Thus, here one sees both policy and legislation being targeted at attracting FDI to developing countries. The mining industry has traditionally been a major recipient of FDI in sub-Saharan Africa, and has commonly been an important foreign exchange earner for the region. Over the forty years to 1993 Africa's share by value of world mining output declined from 23% to 10%, as a result of poor policies, political interference and lack of investment.

Furthermore, this decline has been attributed to lack of investment in systematic geological mapping, poor technical data on mineral endowment, weak institutions and policies, poor infrastructure, the lack of cheap and reliable energy resources, deteriorating commodity prices, poor investment climates and the scarcity of indigenous technical and professional manpower. In recent years, steps have been taken to address some of these issues with thirty-five countries publishing new mining codes by the end of 1995. These have generally resulted in reduction of tax levels, liberal import tax exemptions for equipment, and easing of immigration laws for expatriates.²⁵

Although legislation on direct investment in most developing countries does not explicitly state that investment incentives in the statutes are intended for foreign investors, it is argued that parliamentary debates preceding these pieces of legislation usually indicate that the policy of the host government is such that most of the investment incentives are packaged for foreign investors. Illustratively, the former Minister of Finance in Zambia, contributing on the Investment Bill 1993, observed:

We are dealing with very serious competition from the neighbouring countries around us. We should create those conditions which can make investors, be they American or British or South African, stay and not merely someone who comes here to use us in transit.²⁶

The era of FDI in Zambia can be said to cover the period beginning in the 1980s and up to the present time. The main trends in FDI in Zambia are linked to the dawn of democratic transition in which there was a shift from the era of one party state to multiparty state. The

²⁴ E.I. Nwogugu, *The Legal Problems of Foreign Investment in Developing Countries*, Manchester University Press, Manchester, 1965 page 9

²⁵ UNCTAD, *World Investment Report 1999*. Page 89

²⁶ A.N.L. Wina, *Daily Parliamentary Debates*, Thursday 29th July 1993, page. 560

new democratic dispensation came generally with the neo-liberal economic policy that became the path for economic policy which was not only adopted by Zambia but by many other developing and developed countries²⁷ under the auspices of the multilateral trading regime, the World Trade Organisation which encouraged opening up of national markets, removal of trade barriers to allow for free movement of capital, goods, services and creation of appropriate environment for foreign investment.

In concerted efforts to promote foreign investment, on 8th September 1993, the Zambia Investment Act 1993²⁸ came into force. The objective of this Act was to revise the law relating to direct investment in Zambia so as to provide a comprehensive legal framework for direct investment in Zambia. The investment Act 1993 repealed the Investment Act 1991.²⁹ Directly relevant to this study is Part IV and Part V of the Investment Act 1993. In Part IV, the following incentives appear:

20 An investor shall be taxed on that portion of income which is determined by the commissioner as originating from the export of non-traditional products at a rate of fifteen per centum.

21 An investor shall be taxed on income received from a rural enterprise for each of the first five charge years for which such business enterprise is carried on, reduced by such amount as is required to one-seventh of that tax which would otherwise be so chargeable on such income.

22 (1) An investor shall be entitled to capital allowance.

(2) An investor who incurs capital expenditure on the growing of tea, coffee, or banana plants or trees shall be entitled to a development allowance of ten per centum of such expenditure.

(3) An investor is entitled to a farm works allowance of hundred per centum in respect of expenditure on farming land in his ownership or occupation, and for the purposes of farming, or stumping and clearing.³⁰

2.3 Fiscal Incentives in the Zambia Development Agency Act No 6 of 2006

On 9th May 2006, the Zambia Development Agency Act came into force. The objective of this Act was to revise the law relating to direct investment in Zambia. The Zambia

²⁷M. Muweme, Foreign Direct Investment: What Difference for Zambia? Jesuit Centre for Theological Reflection Bulletin article 50, 2009

²⁸Investment Act 1993 (repealed)

²⁹Investment Act 1991 (repealed).

³⁰Investment Act.1993 (repealed) sections 20, 21 and 22 (1), (2), (3).

Development Agency Act 2006³¹ repealed the Investment Act 1993. Directly relevant to this study are Parts IV, VIII and IX of the Zambia Development Agency Act in as far as attraction and promotion of foreign investment is concerned.

2.3.1 Investment Promotion and Guarantees

Under the Zambia Development Agency Act, there is a board constituted under section 6 whose main task is to promote foreign investment by taking measures and actions which help to create and maintain a predictable and secure investment climate, encourage foreign investment, including the formation of strategic alliances with Zambian business enterprises. This mandate is provided for in section 17 which is in Part IV of the Act. The said section in part provides as follows:

- (1) The Board shall promote private investment by taking measures and actions which help to create and maintain a predictable and secure investment climate; encourage foreign investment, including the formation of strategic alliances with Zambian business enterprises; facilitating partnerships and joint ventures by encouraging co-financing; encourage sector investment so as to promote foreign investment; supporting and taking into account policies of the Government for attracting financing, including private financing.

2.3.2 Protection against Expropriation

It is submitted that the ZDA Act has no provisions specific to foreign investors on standards of treatment. The Act however, does have provisions on the protection of foreign investors' interests with respect to compulsory acquisition of property, the transfer of funds and dispute settlement. Generally, Investment Codes provide that investments will not be expropriated except in the public interest. Expropriations are invariably carried out in accordance with the law and with payment of compensation. In Zambia as already stated above, the ZDA Act does have provisions on the protection of foreign investors' interests with respect to compulsory acquisition of property. This provision is aimed at building investor confidence in the country. It is a clear manifestation of the Zambian government's desire to attract foreign investment by creating a secure and predictable investment climate. In as far as this protection is concerned, Section 19 provides that:

- (1) An investor's property shall not be compulsorily acquired nor shall any interest in or right over such property be compulsorily acquired except for public purposes under an Act of Parliament relating to the compulsory acquisition of property which provides for payment of compensation for such acquisition.
- (2) Any compensation payable under this section shall be made promptly at the market value and shall be fully transferable at the applicable, exchange rate in the currency in which the investment

³¹ Zambia Development Agency Act No 6 of 2006, ss. 17, 19 and 21.

was originally made, without deductions for taxes, levies and other duties, except where those are due.

It is submitted that the above provision is very key in the promotion of foreign investment in Zambia. It clearly demonstrates that Zambia has a stable regime which is conducive for both small and large-scale foreign investment. This position contrasts sharply with the conditions prevalent in most developing countries especially in Africa. For instance, other countries in Africa have few key institutions; they do not have an independent central bank, or media, nor does a neutral and professional military or police force exist in many of these countries. Thus corruption and cronyism are prevalent. Commercial and personal properties are seized arbitrarily by drunken soldiers. As such these countries often have environments that restrict foreign investors, resulting in extreme paucity of FDI in many regions. Several of these factors have been identified in a study conducted by the U.S. Agency for International Development USAID.³²

2.3.3 Taxation and Other Incentives.

In order to encourage the flow of foreign investment, developing countries often provide for tax incentives in their investment codes. The Income Tax Act,³³ the Customs and Excise Act³⁴ and the Value Added Tax Act³⁵ are the basic laws that govern Zambia's tax system. The general corporate tax rate is 35 percent. However, there have been a number of longstanding preferential rates and generous allowances for sectors that the government has wished to promote. For example, the agriculture sector enjoys a rate of 15 percent and successor mining companies to ZCCM pay a concessionary rate of 25 percent. Companies listed on the Lusaka Stock Exchange pay 33 percent to promote financial deepening, commercial banks are taxed at 45 percent of their profits above 250 million kwacha (\$83,500).³⁶

In 2006, the ZDA Act brought in a new set of incentives applicable only to investments that are over \$500,000, are licensed by the Zambia Development Agency and are operating within a sector designated as a priority by the Minister of Commerce, Trade and Industry, the list of

³³ The Income Tax Act, Cap 223.

³⁴ The Customs and Excise Act, Cap 322.

³⁵ The Value Added Tax Act Cap 331.

³⁶ Organisation for Economic Co-Operation and Development, Foreign Direct Investment for Development: Maximising Benefits Minimizing Costs. Page 13

which can be amended by statutory instrument. The incentives themselves are specified in the 2006 budget and stipulate that for the first five years of operation: corporate tax should be calculated on 50 percent of profits; dividends should be exempt from tax and that capital expenditure on the improvement or upgrading of infrastructure should qualify for an improvement allowance of 100 percent. In addition, imported machinery and equipment is exempt from customs duty.³⁷ These incentives it is submitted have substantially increased the flow of foreign investment to Zambia because the investment climate has tremendously improved.

2.3.4 Repatriation and Convertibility Rights

Government policies in many developing countries restrict the ability of foreign investors to convert local currency into their home currency or the currency of some third country for repatriation of capital or remittance of earnings from a project in the host state. The flow of funds from the host state can be restricted or blocked entirely by local currency regulations. Banks and foreign exchange brokers can be licensed by the host state to handle foreign exchange and, thus, the amount of foreign exchange available for commercial transactions can be rationed. In many developing countries this has led to corruption and bribing of public officials. In Zambia however, the situation has been made much better. The ZDA Act provides guarantees for rights of repatriation with respect to profits, debt service, fees, royalties and disinvestment proceeds. As far as this provision goes, Section 20 of the Zambia Development Agency Act states:

Notwithstanding any other written law relating to externalisation of funds, a foreign investor may transfer out of Zambia in foreign currency and after payment of the relevant taxes-

- (a) Dividends or after-tax income;
- (b) The principal and interest of any foreign loan;
- (c) Management fees, royalties and other charges in respect of any agreement; or
- (d) The net proceeds of sale or liquidation of a business enterprise.

Moreover, as regards foreign exchange control and trade permits, the Foreign Exchange Control Act³⁸ was repealed in 1994. There are therefore, no controls on the transfer of capital in or out of Zambia. Export permits are no longer required. These provisions have provided substantial incentives to foreign investors and consequently, have made Zambia a suitable destination for foreign investment.

³⁷The Zambia Development Agency Act 2006, s. 57.

³⁸ The Foreign Exchange Control Act 1965 (repealed)

2.3.5 Dispute Settlement System

Zambia has a very long history of investment disputes dating back to the period of nationalisation. However, the situation has improved since 1991. Zambia has embraced both local and international arbitration. International arbitration is a right for investors covered by Bilateral International Treaties BITs. Otherwise, and if both parties agree, investors may resort to international arbitration under the 2000 Arbitration Act.³⁹ Zambia is also a signatory to the 1958 New York Convention has signed the UNCITRAL model law and is a member of the International Centre for the Settlement of Investment Disputes ICSID. This means that where international arbitration is used, the resulting arbitral award is binding and must be enforced in Zambia. It is argued that by agreeing to submit all disputes to arbitration, the government is effectively waiving its right to sovereign immunity.

The 2000 Arbitration Act also provides for domestic arbitration which was used successfully in the case of private mobile phone provider Telecel v. ZAMTEL. The dispute was settled in seven months. The results of domestic arbitration are also legally binding. USAID and the Law Association of Zambia are currently in the process of reviewing the legal and institutional framework in favour of strengthening national arbitration.⁴⁰ All these efforts are aimed at encouraging foreign investment and building investor confidence in the country.

2.3.6 Regional and International Investment Agreements

Zambia is a member of several multilateral agreements on investment, notably, the Washington Convention, which put in place ICSID since 1970, and MIGA since 1988. The country has signed twelve BITs, with Belgium, China, Croatia, Cuba, Egypt, France, Germany, Ghana, Italy, Luxemburg, the Netherlands and Switzerland, of which only the BITs with Germany and Switzerland have been ratified.⁴¹ Thus the BIT network is thin and important investors, such as the United Kingdom and South Africa, are not represented. Furthermore, Zambia is a signatory to other international agreements which touch on investment. These include: the agreement establishing the WTO, of which the country is a

³⁹ The Arbitration Act No 19 of 2000.

⁴⁰ <http://www.doingbusiness.org> (Word Bank)

⁴¹ UNCTAD Investment Policy Review of Zambia 2005.

founding member and nineteen double taxation treaties DTTs. Currently COMESA, of which Zambia is a member, is working on proposals for a common investment area headed by a regional investment agency. However, plans for the investment area are still at an early stage, although work is underway on coordinating competition policy.⁴²

Zambia is also a signatory of the African Caribbean and Pacific ACP countries and the European Union Co-operation Agreement, dating back to 1975 when the first Lomé convention was signed. Zambia ratified the Cotonou Agreement in April 2002. The latter provides for investment and private sector development matters, calling on its signatories to improve their investment climates.⁴³ All the above mentioned instruments provide for dispute settlement in the area of foreign investment. This puts Zambia in a better position to attract foreign investment.

2.3 Conclusion

From the foregoing and indeed on a plethora of authorities, this chapter has demonstrated that because of the new policy which involved opening up of key sectors of the economy to both local and foreign direct investment, there has an increase in the inflow of investment in Zambia. The investment promotion agency created under the Investment Act continues to encourage investment in all sectors of the economy, with priority given to the agriculture, tourism, mining and manufacturing sectors.

⁴² UNCTAD 2005

⁴³ World Bank, "Zambia: the challenges of Competitiveness and Diversification", Report No. 25388-ZA, 2003.

CHAPTER THREE
INHERENT PROBLEMS IN THE TRANSFER OF TECHNOLOGY TO
DEVELOPING COUNTRIES

3.1 Introduction

Chapter II examined the determinants of the flow of foreign investment as a vehicle for technology transfer. It examined those factors which determine the flow of foreign investment to developing countries. At this juncture it is now necessary to look at those problems which characterise the transfer of technology to developing countries. Admittedly, problems which affect the transfer of technology are many and this chapter will not attempt to deal with each of them. However, the chapter will focus on a few major problems; these few problem areas have been chosen for the particular reason that they have a strong bearing on the cost of the technology to developing countries and the extent to which it would benefit the recipient country.

3.2 Unfair Terms of Technology Transfer

It is often argued that the terms under which technology is transferred from developed to developing countries are not fair and do not encourage industrial development in developing countries. This has invariably led to the main problem of technology transfer which is dependence. The terms are such that developing countries have always remained dependent on developed countries. It is submitted that the terms should have been such that developing countries should later be able to develop their own technologies. Technology should be simplified to suit the local circumstances, but it still remains a complex issue as it is a much more complicated process which in turn is affected by legal, socio-political and other economic factors.⁴⁴

Besides, it is stressed that the other problem of technology transfer is that it limits the independence of decision making which is desired in itself as an essential element of the learning process so that developing countries may develop the capacity to make independent technological choices and subsequently develop their own technology. As Carlos Andres Perez expressed the view of the leaders of many developing countries when he said:

⁴⁴ V.S.Geokjian. "Legal Problems of Transferring Technology to the Third World." A.J.I.L. Vol. 25, 1977, page 656.

Today industrialised nations must share decision making with us. We believe in interdependence among equals rather than an interdependence in which there are subordinates.⁴⁵

3.3 Unsuitability of the Technology Transferred

As it has been pointed out above that the terms of transfer of technology usually have the effect of affecting the decision making process, the resultant consequence is that much of the technology transferred is unsuitable in the sense that technology developed in developed countries tend to be designed to meet the needs of the advanced countries and such products are ill-suited to meet the basic needs of the poor countries. It is further argued that the technology transferred is also unsuitable as only a limited amount of it is transferred. This is because most of the Research and Development is concentrated in a few firms located in the developed countries.⁴⁶ These firms have no commercial interest in diffusing their knowledge to potential native competitors. They minimise the transfer of suitable technology by neglecting to train host country nationals in Research and Development posts.

The issue of suitability is a question of value-judgment. The concern however, is not with the viewpoint of foreign investors. From a host country point of view, the suitability of technology hinges on what is perceived necessary for the development needs of the host country. On this basis, the author of this paper registers strong reservations to the old views of the UN Economic Commission for Europe. The Commission argued that:

Where technology gaps exist between countries, international trading opportunities are limited. Now, transfer of technology and capital of embodying high-level technologies is considered as an important means of closing this technological gap. Economic policy, therefore, aims at intensifying these transfers⁴⁷

It must be observed that more important than closing the gap between countries is the suitability of the technology being transferred to the host country. Development is a multi-dimensional concept and it does not only entail closing the gap, but also calls for a sustained commitment to uplifting the general social, cultural and political standards of people.⁴⁸ Indeed, the anatomy of the concept of development involves both quantitative and qualitative goals.

⁴⁵ S.J.Louis, Transfer of Technology from Industrialised Countries. The Courier No. 39, 1978, p.38.

⁴⁶ L.W.Arthur, Technology Creation and Technology Transfer by Multinational Firms. AIJA Press 1979, p.38.

⁴⁷ UN Economic Commission for Europe, Factors of Growth and Investment Policies: An International Approach. Pergamon, Oxford, 1978. Page 82

⁴⁸ UN Economic Commission for Europe. Page 22

3.4 Tied-in Purchases

Tied-in Purchases have been identified to be among the most serious problems affecting the transfer of technology to developing countries. These have been defined as contractual requirements which oblige the technology recipient country to purchase immediate products, other inputs, capital equipment and spares from the country supplying the technology or from some other specified sources.⁴⁹ From the prevalence of Tied-in Purchases in the transfer of technology agreements in developing countries, one cannot hesitate to conclude that the exporters of technology must derive hidden benefits from such requirements.

It is submitted that perhaps the most important reason for Tied-in Purchases is to provide a mechanism for withdrawing profits from the technology importing country by the technology supplier. After a Tied-in Purchase agreement has been concluded, the technology importer is restricted only to one supplier and hence he is denied the exploitation of new market opportunities because of the agreement entered into with the technology supplier which places a restriction on further acquisition of technology from other sources.

3.5 Restrictions on the use of Imported Technology

Restrictions on the use of the imported technology present one of the notorious problems in the transfer of technology. Once the restrictions have been placed on the use of technology, the technology importer is at the mercy of the exporter as regards those restrictions. Of course it could be argued that once the technology agreement has been signed and implemented, the importer can ignore the restrictions and do what is in his best interest. Theoretically, this is sound but practically such course of action works to the disadvantage of the technology importer. In the first place, the technology suppliers are usually big companies with international connections and they can use their influence to make it difficult for such technology importers to secure future technology agreements.⁵⁰

Even assuming that the technology exporter will not have much impact on the international technology market so as to influence future technology agreements, once the importer has unilaterally breached the restrictions, the exporter will not feel bound to honor the agreement so that in the event of a need for spares or other technical repairs the exporter will not supply them.

⁴⁹ UNCTAD, Draft International Code of Conduct on Transfer of Technology, UNCTAD Secretariat 1998.

⁵⁰ UNCTAD, 1998.

3.6 Restriction as to Sales

In some cases, the supplier of technology will insist on some clause to be inserted in the agreement which would guarantee control over sales of the products to be produced by the technology. The clause may require that products be sold only to the subsidiaries of the technology supplier. Again this raises the question of the fairness of the price. There is a strong possibility of a lack of objective determination of the price when it is determined by the holding company. It is argued that restriction clauses are a carefully calculated policy to control the outcome of the sold technology. If they can control the use of their exported technology, then they can effectively hold back any potential competition.⁵¹

3.7 Transfer Pricing

A transfer pricing has been defined to mean the price paid for goods transferred from one economic unit to another, assuming that the two economic units involved are situated in different countries, but belong to the same parent company. It has been noted in chapter I that foreign investment is an ideal source of technology. The argument for foreign investment as a vehicle for technology transfer is the dual role that the investment plays. Apart from providing capital for investment which is in short supply in developing countries, the investment brings with it the know-how necessary for the success of the investment. Particularly, it was noted that multinational firms are well suited for this role because of their ready resources, easy mobility, abundant trained personnel and wide experience derived from the many countries in which they do business.⁵²

However, much as it is an ideal source of technology, foreign investment has its shortcoming that of transfer pricing. This is particularly acute in the extractive industries where the raw materials are produced for export by the foreign investor. Because the exporting company in the developing country is usually the subsidiary of an outside company located in the developed importing country, the transfer price charged does not really matter as in the final analysis the parent company reaps the benefits. Typically, transfer pricing would work like this: The subsidiary in the developing country is engaged in some export of products to the parent company. The price demanded for the export is lowered disproportionately to their real value. After the parent company has bought the products from the subsidiary at such a price,

⁵¹ G. Balasubramanyan, United Nation Internation Transfer of Technology to India, Praege Publishers, Paul Chapman, 1973. Page 71.

⁵² J.D.Edwards, Transfer Pricing, Techniques and Uses, National Association of Accountants, New York, 1980. Page 56.

the raw materials are converted into manufactures and sold at their full price value meanwhile, the host developing country has made a loss.⁵³

Apart from the foreign exchange loss on the price of the products exported, the tax returns from the subsidiary company will be much lower because the transfer pricing will reflect minimal profits. Because the subsidiary has not made profit on the export, no taxes are levied on it and hence tax revenues are lost to the developed home country of the parent company. The reverse is true. Transfer pricing may be used by the foreign subsidiary to get money out of the country by deliberately paying more for imports whose real value is much less. The subsidiary company may be getting its supplies from the parent company. Instead of charging the fair market price for the supplies, the price is deliberately inflated so that an outflow of funds results in the host country.⁵⁴

In Zambia for example, some resident companies purchasing merchandise from parent organisations abroad added as much as a third of the cost price when making payments. This allowed them to remove capital at a still higher rate while at the same time increasing Zambia's cost of living.⁵⁵ As a matter of fact transfer pricing in many foreign companies is made a part of corporate policy. This is so irrespective of the host country's profit externalisation policies. Such outflows of funds can place adverse strains on the economy of the developing country especially that foreign exchange is always in short supply.

⁵³ J.S. Wilkie, *Transfer Pricing Strategy in a Global Economy*, (Amsterdam: IBFD, 1993), P.63.

⁵⁴ M.Mehafdi, *Transfer Pricing*, Academic Press, London, 1994. Page 38.

⁵⁵ M.Ndulo, *New Mining Ventures in Zambia*, *Georgia Journal of International and Comparative Law*, Vol. 7, 1977, p.583.

A study carried out in Columbia to determine the extent of overpricing in the chemical industry revealed what had hitherto been suspected. The results are as shown in the following table.

Imports at F.O.B.

<u>Name of product.</u>	<u>Price U.S Dollar.</u>	<u>Percentage of over pricing.</u>
Hydroclorotiazide	62, 625	1, 400
Metimazol	66, 500	3, 600
Substance of Valium	14, 000	8, 584
Chlordiase Poxide	3, 311	5, 647
Frusemide	102, 442	1, 075
Tetracycline Metaphosphate	28, 750	998
Ethionamide	9000	875
Chlorpromazine	26, 760	733
Tolbutamide	46, 200	600
Prometazine	6, 850	636
Metronidazol	54, 690	521

Source: From materials presented by Columbia National Planning Dept. during the Second Meeting on Technology Transfer of the Andean Common Market, Lima, Peru 1971. Reproduced by Constantine Vaitsos in his Article “Patents Revisited, Their function in developing countries”, in Cooper, C. (Ed.), Science, Technology and Development, p.86.

Formula for working out the extent of over pricing $\frac{(A-B)}{B} \times 100$ Where:

B

A= Fob prices paid by Columbia.

B= Fob prices quoted in different world markets.

3.8 The Reverse Transfer of Technology

A study of the problems of transfer of technology to developing countries would not be complete without consideration of the problem of reverse transfer of technology, commonly called “brain drain.” It is argued that all the efforts to transfer technology to developing countries will have marginal effects if developing countries cannot maintain their trained manpower. Available statistics show that there is a continuous outflow of trained personnel from developing countries to developed countries. Unless some way can be found to minimise the outflow, developing countries will take long time to train sufficient manpower to make the transfer of technology beneficial to developing countries.

It is rather ironic that developing countries which are dependent on trained man power from developed countries should be faced with the problem of an exodus of the few trained personnel they have to developed countries. It is surprising that between 1960 and 1972 developing countries provided no less than 230, 000 highly qualified personnel to Canada, the United States and the United Kingdom. If other developed countries are to be considered, altogether developing countries lost a total of 300, 0000 trained personnel to the developed countries. Of this figure thirty out of every hundred went to the United States.⁵⁶

The overall effect of this substantial transfer of technology from developing to developed countries for the period 1961 to 1972 has been income transfer amounting to some 44 billion dollars. Shared among the three major western countries, the United States accounts for 30 billion, Canada for 10 billion and the United Kingdom 4 billion dollars. The imputed capital value of reverse transfer for the above period amounts to some 50 billion dollars. When contrasted with the official development assistance received by developing countries from the three developed countries mentioned above, developing countries end up with a net loss of a billion dollars.⁵⁷

The problem of reverse transfer of technology has been compounded to a large extent by policies of developed countries. Immigration laws enacted after the Second World War removed discrimination but they were deliberately biased in favour of skilled migration. The United States passed such a law in 1965⁵⁸, Canada in 1967 and the United Kingdom in 1962

⁵⁶ K.K. Subrahmanian, Import of Capital and Technology. People's Publishing Home, New Delhi 1972. Page 145

⁵⁷ S.Picciotto, International Business Taxation, George Weidenfeld and Nicholson, London, 1992. Page 79

⁵⁸ The U.S.Immigration Act of 1965.

and 1965. The migration laws are deliberately favourable to professionals over other immigrants.

3.9 Conclusion

Transfer pricing, tied in-purchases and the brain drain pose a great problem in the transfer of technology to developing countries. The former two add a hidden cost to the transfer of technology which the developing countries can ill-afford. They represent a drain on the scarce resources of developing countries. The restrictions which usually accompany the transfer of technology are not only cumbersome to the use of the technology but they render the application of the technology so brought almost incapable of innovation. The outflow of trained personnel reduces the effectiveness of technology transfer. It tends to perpetuate technological dependence.

CHAPTER FOUR

REGULATION OF THE TRANSFER OF FOREIGN TECHNOLOGY TO DEVELOPING COUNTRIES

4.1 Introduction

Chapter III examined the inherent problems in the transfer of technology to developing countries. It ascertained that factors such as transfer pricing, tied in-purchases and other restrictions which usually accompany the transfer of technology are not only cumbersome to the use of the technology but they render the application of the technology so brought almost incapable of innovation. As a result, in recent years, there has developed widespread recognition of the need to regulate the inflow of foreign technology into developing countries from advanced countries. This recognition has arisen from the growing evidence that unregulated transfer has involved high costs, has restricted the independence of decision makers, has limited the learning effects of technology transfer and has inhibited the development of local technological capacity. It has been argued that an active policy regulating the inflow of technology is necessary to mitigate these effects.

Since most developing countries are keen to receive foreign technology, it is not surprising to find that competition among governments to attract increasing technology transfers has heated up in recent years. To this competition Zambia is no exception as it perceives technology as a key instrument to foster growth and competitiveness in all its sectors of the economy. Nonetheless, it is by no means clear that unregulated technology transfer generates more benefits than costs for the host country as is often assumed. In this connection, the main objective of this chapter is to examine what conditions, policy and legal framework Zambia has put in place to regulate the transfer of foreign technology so that it may indeed contribute to sustainable development, innovation and local technological development.

4.2 Review of Legislation Relating to Transfer of Technology in Zambia

4.2.1 Investments Acts

The Investment Act of 1986 repealed the Industrial Development Act. Under the Act there was a provision for the establishment of an Investment Council⁵⁹ and that every agreement had to be registered with the Director of Investments who had to keep a register containing all

⁵⁹ Investment Act 1986, S.3

the details pertaining to the transfer of technology. The Act spelt out certain conditions in agreements for the transfer of foreign technology or expertise.⁶⁰ It is interesting to note, however, that neither the Zambia Development Agency Act 2006 nor the repealed Investment Acts 1991 and 1993 talked about regulating technology transfer to Zambia. An important reason behind this development is the Zambian government's policy not to have political control over foreign direct investment.⁶¹

Before the 1991 and 1993 Investment Acts were enacted respectively, it was pointed out in the Fourth National Development plan that the 1986 Investment Act would be amended to specify more clearly where foreign investors could invest.⁶² This policy directive was never carried out. Instead, the Investment Act 1986 was repealed and replaced by the Investment Act 1991. Indeed, the correlation between the political economy and the development of the law in a country such as Zambia cannot be exaggerated. The political economy remains a major determinant variable in the development of law.

With changes in Zambia's political economy, such as the worsening of her international debt position, state capitalism and the accompanying re-organisation development strategy were abandoned. In their place a market economy emphasising private enterprise and free market forces was ushered in. This brought along with it the new accommodation strategy. This new strategy explains for example, the shift from the 1989 policy directive to amend the 1986 Investment Act to the decision to repeal and replace the statute with the Investment Act 1991. Be that as it may, since the Investment Acts 1991, and 1993 and the succeeding Zambia Development Agency Act 2006 do not contain provisions on the regulation of technology transfer to Zambia, the study proceeds to make reference to the repealed Investment Act 1986. The latter Act had provisions on technology transfer.

Part VII of the repealed Investment Act 1986, dealing with technology transfer agreements, provided *inter alia*:

Every agreement for the transfer of foreign technology or expertise shall be registered with the Director of Investments by any beneficiary. An agreement for the transfer of foreign technology or expertise shall not contain any condition-

- (a) Which restricts the use of competitive techniques;
- (b) Providing for any form of control over the management of the licensee's enterprise
- (c) Which restricts the sources of supply of inputs;
- (d) Which restricts the volume or structure of production: or

⁶¹ A Compilation by T.C. Bwalya, Director of Loans and Investment Department, National Commission for Development Planning, Ministry of Finance, Lusaka 4th February, 1992.

⁶² Ministry of Finance, Fourth National Development Plan 1989-1993, Lusaka: Government Printers, 1989. Page 541

(e) Which limits the ways in which any patent or other know-how may be used.⁶³

By contrast, the Investment Code 1985 of Ghana⁶⁴ does not provide a list of conditions that should not be included in a technology transfer agreement. Instead, section 27 (2) of the Ghanaian Investment Code provides as follows:

Where an approved enterprise involves a technology transfer agreement the Centre shall:

- (a) Evaluate such agreement;
- (b) Advise the investor with regard to the choice and suitability of technology;
- (c) Monitor and ensure compliance with terms and conditions of such agreements.

From the foregoing it is argued that in the case of Zambia, the listing of conditions that could not be included in technology transfer agreements had its advantages and disadvantages. On the one hand, the listing provided certainty to prospective investors on what they could do and what they could not do. On the other hand, the listing made it difficult for the Zambian government to stop foreign investors from using contractual terms and conditions which were not covered under the Act. Investors had the opportunity to enter into contractual terms not covered by the list. These terms could have been either favourable or unfavourable to Zambia.

It must be pointed out here that the approach in the Ghanaian Investment Code 1985 is a more flexible way of regulating technology transfer than the approach found in the repealed 1986 Investment Act of Zambia. The Ghanaian approach hinges upon the Investment Centre's evaluation of the suitability of the technology. Moreover, section 26 (2) of the Ghanaian Investment Code 1985 sets out positive conditions which investors may be required to include in their technology transfer agreements. These positive conditions relate to the amount and source of capital, the size of the project, the need for continuous disclosure on the implementation of the project, the nationality and number of shareholders, the training of Ghanaians, the utilisation of local raw materials and the prevention of environmental pollution.

Given the above analysis, it could be submitted that the major shortcoming of Zambia's legislation on regulating technology transfer is that whereas the Investment Act 1986 contained a list of conditions which could not be included in technology transfer agreements,

⁶³ Investment Act 1986, Ss 36 (1) and 37 (2)

⁶⁴ Ghana's Investment Promotion Centre Act 1994

the subsequent Investment Acts such as the two repealed 1991 and 1993 Acts and the current Zambia Development Agency Act 2006 are silent on the matter.

4.3 The Patents Act, Chapter 400 of the Laws of Zambia

The Paris Convention is the main instrument for regulating technology through patents, trademarks and industrial designs. Zambia acceded to this treaty at independence in 1964, since then the country has been a state party to the convention till date. The Patents Act, the Trade marks Act and the Registered Designs Act are all ancillary to the convention. The Patents Act governs patent licenses for inventions and these licenses are only granted to countries which have patent laws. The Act was enacted in 1958 during the colonial era and is the most important piece of legislation relating to transfer of technology in Zambia. Under the Act, the duration of a patent licence is sixteen years, after expiry it can be renewed for ten years.⁶⁵

Furthermore, patented technologies must be worked in Zambia. Non-working of an invention is regarded as an abuse of the rights conferred by the patent and in the event that a patentee abuses his right like failure to work the patented invention, it may be compulsorily licensed.⁶⁶ This means that anyone interested can apply to the Registrar of patents on such grounds and the patent will be declared to be in public domain whether or not the duration has expired. In other words, any person is then entitled as of right to the grant of a licence. Arguably, in practice the above provision is flouted, very few patents are usually worked and patents that are not worked cannot transfer technology and developing countries like Zambia will not benefit from the transfer. Besides, the Act does not define working of a patent so it is difficult to know what is meant by this term and this also amounts to an omission. For example, in Israel the patent laws provide that the exercise of the rights is regarded as an abuse if the product the subject of the patent is not manufactured in Israel.⁶⁷

The Act also states that the patent should be in the public interest without specifying any particular aspect. It is submitted that this renders the clause open to abuse by administrators. Furthermore, the Act requires that the patentee makes a full disclosure of his invention

⁶⁵ The Patents Act. S. 29 (a)

⁶⁶ The Patents Act. S. 37 (6) (a)

⁶⁷ Guidelines for the studying of the transfer of technology to developing countries, United Nations, 1988, page 22

through the patent documents and the manner in which the invention has to be worked. Once the documents are lodged with the patent office they are examined and published for public information to which the public then has access so that the licensee will know what they will receive before the licensing agreement is signed.⁶⁸

Be that as it may, it is argued that information included in the patents is not always enough to play an effective role in the transfer of technology even though it is required that a full disclosure be made concerning an invention or a new process. Very often vital information is withheld by the patentee so that an outsider cannot obtain from the letters patent sufficient knowledge to work the invention. Because of such practices by the developed countries transfer of technology cannot be enhanced and is not beneficial to the developing countries. Additionally, the provision that there shall be conducted a search and examination of the substance is rendered redundant since developing countries lack the necessary qualified staff to carry out such search and examination, hence they are at a loss or disadvantaged position.

The Act prohibits the inclusion of restrictive terms in the agreements and if such terms are included are null and void.⁶⁹ It is submitted that the provision is flouted in that developed countries or firms from developed countries do in fact include such terms in the agreements. These restrictive terms hinder the development of industry in developing countries and also hamper the smooth operation of transfer of technology. For instance, in the agreement between Livingstone Motor Assemblers (Licensees) and Fiat Auto Spa (Licensor), the licensee was restricted firstly to use figs, fixtures, assembly equipment and parts exclusively from the licensor. This leaves the licensee with no means of adapting the technology to local conditions and cannot procure the materials from other sources even if they were to be offered at reduced costs.⁷⁰

Furthermore, the licensee was restricted to the production of 2, 500 per year and thus denying it an opportunity of going into export trade. The provision which prohibits the inclusion of restrictive terms could have been invoked by the licensee, however, in practice this is not done so that developing countries will always remain dependent on the developed countries and this dependence it has been asserted is sometimes self-perpetrating because there are

⁶⁸ The Patents Act, Section 14 (3)

⁶⁹ The Patents Act. S. 49

⁷⁰ U.M. Kankuta, Licensing Agreement between Livingstone Motor Assemblers and Fiat Auto Spa, Comparative Report of the Science and Technology Implements Project, 1974.

provisions like section 49 of the Patent Act which prohibit the use of restrictive terms in transfer of technology agreements but which provision is not being used properly. Section 74 of the Act before its recent repeal has always had a provision that there shall be set up a patent tribunal to determine the decisions of the Registrar.⁷¹ According to research conducted at Patents and Companies Registration Agency PACRA, the tribunal has never existed although the Act provided for it. The research conducted revealed that the tribunal never existed because the qualifications to head it were quite high and also because of lack of finances to run the same. Some of the qualifications were that the president of the tribunal shall be a person who firstly, has been a judge of a court having unlimited jurisdiction in civil and criminal matters in some parts of her Britannic's Majesty's dominion⁷² or has for not less than ten years been qualified and entitled to any court or courts having jurisdiction.⁷³

The fact that the Act provided for a tribunal which never existed for a long time is a clear indication of how ineffective it is and this calls for an amendment to strengthen other provisions. The Patent Act is capable of playing an effective role in transfer of technology to the benefit of the developing countries if and only if its provisions are enforced. In practice however, as already discussed its provisions are flouted and the language is too technical for the technology recipients who lack the necessary skills to unpack the agreements.

4.4 The Trade Marks Act, Chapter 401 of the Laws of Zambia

Like the Patents Act, the Trade Marks Act was also enacted in 1958 during the colonial era. The Act is meant to protect and govern trademarks of goods only.⁷⁴ During the colonial era when the Act was enacted, this provision was reasonable but today in view of prevailing circumstances, there is need to extend the Act to service marks for the benefit of institutions providing services like banking, hotels, Airlines and so forth. In the case of banking institutions in the past there were few banks mainly four namely: Zambia National Commercial Bank, Barclays Bank, Standard Chartered Bank and Grindlays Bank. Each institution had its own logo or service mark and there was very little competition. But today there are many banks and some take advantage of the goodwill of old banks by making

⁷¹ The Patents Act, S. 74 (1) (a)

⁷² The Patents Act S. 74 (2) (a)

⁷³ The Patents Act S. 74 (2) (6)

⁷⁴ The Trade Marks Act, S. 8

similar or using the same logos or marks and because of this there is need for protection to prevent such practices.

In Zambia a thorough research on the subject has revealed that there has never been a case where the owner of a trade mark takes an infringer to court probably because they do not know what to do and some are ignorant of the fact that such an action can be commenced. This was revealed in the Premium oil saga when the Managing Director stated that there was no legal provision to take care of such offences in Zambia. The premium oil saga involved an infringement of the premium oil trade mark by street vendors who were selling cooking oil in containers with trademarks like the premium oil trademark but in fact the cooking oil was not premium oil product. According to the Act it is up to the owner to deal with the infringer and since they are ignorant the infringer will get away easily with no punishment at all.⁷⁵

It is argued that the existence of trademarks enhances restrictions that is to say, in most licensing agreement of trademarks it is usual to include restrictive terms. The licence or agreement for use of trade mark is usually granted with respect to specific registration of the marks in the country within which the foreign firm is located. The following is an example of such restriction in the agreement:

The distribution of our products bearing our trademarks is normally to areas within such countries.⁷⁶

The effect of such provisions is self-evident. They are intended to eliminate the licensee from competing with the licensor in his home and other export markets. As already stated restrictions hinder the development of industry and technology transfer in developing countries since most of the potential industries are already in existence in developed countries and no benefit will derive from the transfer. There is also a tendency of abusive practices by the developed countries. Usually licensing agreements will contain all the items that is to say, trademarks, patents and so on in one agreement. It is submitted this cannot help the development of industry and technology transfer in Zambia because there are so many items in one agreement. It is argued therefore, that the agreement should contain one item so that each one can take care of particular aspects of technology transfer.

⁷⁵ The Trade Marks Act S. 9

⁷⁶ Lesotho Law Journal Vol. 1 No 1 1988.

Most provisions in the Act need to be amended in order to take account of the current situation and thereby effectively transferring technology to the benefit of the country. Use of the restrictions should be prohibited as well as abusive practices. It is submitted that this would balance foreign investment in that both parties would benefit from the agreement because technology should be freely transferable. Investors will still invest under such conditions because they will not lose anything so long they have guarantee that their investment will not be nationalised.

4.5 The Exchange Control Act, Chapter 593 of the Laws of Zambia (Repealed)

The Act had provisions relating to the payment of transfer of technology agreements. According to the Act, there was a provision to the effect that notwithstanding anything to the contrary contained in any enactment, the Minister may by statutory instrument make regulations relating directly or indirectly to the control of imports and exports from Zambia and the transfer or settlement of property and payment.⁷⁷ The Act has since been repealed and now there are no guidelines as to the payment. Arguably this implies that parties to the agreement have discretion to fix whatever payment they deem fit. This will adversely affect the party buying that is Zambia, because the seller, the developed country, might charge high fees and the buyer might be unable to pay. The buyer is therefore, at a disadvantage.

4.6 Conclusion

In conclusion, it has been demonstrated that the transfer of technology enables developing countries to utilize the science, technology and know-how available in developed countries. They acquire technology developed and already used successfully elsewhere. In Zambia most of the methods through which technology transfer takes place depend on legal relations that is consensual legal arrangements between the parties. However, if these arrangements are not regulated, technology transfer cannot benefit the recipient country. In Zambia the major shortcoming of legislation on regulating technology transfer is that it does not adequately address the problem of restrictive measures inserted in technology transfer agreements.

⁷⁷ The Exchange Control Act, S. 3 (1) (c) (i) (ii) (iii)

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This obligatory essay has attempted to critically analyse foreign direct investment as a vehicle for technology transfer to developing countries, Zambia in particular. It has shown the problems involved in transferring technology from developed to developing countries. In considering some ideas for solving some of these problems, this essay does not propose to provide ready tailored solutions. Rather, it is an attempt to put across ideas of general application which if refined and given consideration, could provide answers to some of the problems discussed. Of course some of the ideas have already been referred to earlier in this essay and it will not be necessary to consider them again.

5.2 General Conclusions

In chapter one the study introduced a number of concepts and definitions of foreign direct investment, technology and transfer of technology from developed to developing countries. It demonstrated how foreign direct investment acts as a vehicle for technology transfer from developed to developing countries. Besides, it highlighted the actual mechanisms through which technology is transferred. These included the Sale and Import of Capital Goods, the Consultancy Arrangement, the Franchise and Distributorship and the Turn-Key Project. In light of this it can be concluded that developing countries world over realise the importance of attracting investment into their countries. This is because there is a correlation between foreign direct investment and technology transfer. Nations encourage investment into their countries because of the skills and technology that these MNCs bring in order that their nations develop economically.

Chapter two examined the various fiscal and policy incentives that the government of the Republic of Zambia has put in place to attract foreign investment. This is because for there to be transfer of technology through foreign direct investment, then first and foremost this investment must be acquired. These policies were intended to make Zambia a competitive investment destination. In doing so, the study examined the Zambia Development Agency Act. From this Act it can be concluded that indeed a number of incentives have been put in place to attract foreign investment. These include investment promotion and guarantees,

protection against expropriation, preferential tax regime, repatriation and convertibility rights and favourable dispute settlement system through arbitration.

In chapter three the study examined the inherent problems in the transfer of technology from developed to developing countries. It also highlighted specific major problems that impede the transfer of technology to developing countries. These problems have been identified to include unfair terms of technology transfer, unsuitability of the technology transferred, tied-in purchases, restriction as to the use of imported technology, restrictions as to sales, transfer pricing and the reverse transfer of technology. Hence it can be concluded that these problems add a hidden cost to the transfer of technology which developing countries can ill-afford. These restrictions which usually accompany the transfer of technology are not only cumbersome to the use of the technology but they render the application of the technology so transferred almost incapable of innovation.

Chapter four is a review of the available legislation relating to the regulation of transfer of technology in Zambia and how effective these pieces of legislation are. In this respect as regards industrial property rights the chapter has examined the Patents Act and the Trade Marks Act. For legislation relating to acquisition of technology through supply of know-how it reviewed the investment Acts of 1986, 1993, 1991 and the Zambia Development Agency Act of 2006 and finally for the payment for technology it reviewed the Exchange Control Act. From the review of these pieces of legislation it can be concluded that in Zambia the major shortcoming of legislation on regulating technology is that it does not adequately address the problem of restrictive clauses and measures inserted in technology transfer agreements between developed and developing countries.

5.3 Recommendations

In order that the benefits of technology transfer through foreign direct investment may flow to Zambia and are enjoyed by the population, it is necessary that a few changes are made and implemented. The discussion in this section covers the changes that should be made for the benefits to be realised. These will be tackled in terms of policy changes and legal changes.

5.4 Policy Recommendations

5.4.1 Establishment of Local Research and Development Institutions

It has been admitted in chapter III that not all the technology available in developed countries will be able to solve the problems of developing countries. Understandably, the problems for which the technology of developed countries has been developed are peculiarly different from those obtaining in developing countries. For instance, most of the technology available in developed countries today is technology designed to solve the problems of an industrialised society. Developing countries on the other hand are still at the bottom of the ladder to industrial development. Given these vast differences in the needs and problems obtaining in the two economic systems, developing countries must therefore, encourage the establishment of local research institutions which would concentrate on developing technology suitable to their needs.

In the Zambian context for instance, these local institutions would concentrate on the development of labour-intensive technology because of the abundance of cheap labour in the domestic labour market. In this country, labour-intensive technology would create employment opportunities, whereas capital-intensive technology which is usually imported would lead to maintenance and administrative costs in the running of the technology. Capital-intensive could also create unemployment while constraining free market forces and competition by creating oligopolistic tendencies in the market. Indeed, monopolies discourage small domestic enterprises from developing due to economies of scale created by multinational corporations and introduction of monopolistic practices in the economy.

5.4.2 Establishment of Regional Technology Information Offices

Information here will be treated in a dual sense. Firstly, there is need for information about availability of technology and the terms offered by the exporters of technology. Secondly, as has already been shown that foreign investment is an important source of technology, there is need for information about investment policies and potential areas in the economy where foreign investment is well come. The problem of lack of information on technology could be greatly minimised if developing countries could in collaboration with the United Nations establish Regional Technology Information Offices RTIOs.

The RTIO would operate as a department of the various UN Regional Economic Commissions. The duties of the office would include collecting information on the latest development in technology in its region of operation. It would also collect information on global scale to serve the needs of the region. Besides, it would collect technical agreements between exporters and importers of technology and try to work out model standard agreements which developing countries could refer to when negotiating technology agreements. Furthermore, the office would compile the technology policies of the various countries within its region for quick reference by regional members or technology exporters. It is hoped that with this office in place, developing countries would benefit a great deal from the technology transferred. There would also be a considerable reduction in the cost involved in the transfer of technology because information would be readily available to all technology importers.

5.4.3 Further Improvements in the Investment Policy and Regulatory Framework

Foreign direct investment is very important to developing countries for economic development, the building of infrastructure and technology transfer. Of all these the main area of concern for this essay is the role of foreign direct investment in the transfer of technology. Therefore, there is need to put necessary measures in place in order to attract enough investment for this purpose. Zambia has done much in the last decades to foster private sector development and FDI. This was typified by the 1993 Investment Act. The new Zambia Development Agency Act introduces compulsory licensing and screening of new investors, possibly restricts the scope for incentives and makes it more difficult to employ foreign workers and obtain land. This obligatory essay recommends the following:

Compulsory screening and approval should be restricted to investors in sectors such as infrastructure and mining, or those applying for incentives. Besides, registration for information purposes should only require information directly relevant to monitoring FDI statistics. Zambia should ratify its outstanding BITs and negotiate agreements with countries from which most of its FDI originates, especially the United Kingdom and South Africa. Double taxation treaties should be negotiated with newly emerging investor countries in East Asia. Zambia should take an integrated approach to reforming its fiscal framework. The current practice of high taxes mitigated by widespread piecemeal incentives should be reviewed in favour of a lower general level of corporate taxation, as a way of encouraging local and foreign investment, improving the business environment and developing a stronger

fiscal base. There is a need for clarification with regard to eligibility for fiscal incentives under the ZDA Act's \$500,000 threshold.

Furthermore, the requirement of presidential consent for land transfers should be removed as it is a government intervention in the land market that serves no public purpose and increases investment risk. Government oversight should be confined to land use matters and to due process in the conversion of customary land to titled land. The unpredictable nature of the work permit system can be improved by the introduction of an automatic quota system, dependent on size and sector of investment, to enable investors to recruit abroad for a small number of key positions. More generally, guidelines on the awarding of work permits should be introduced and published. Additionally, Zambia's commercial justice system is failing to meet the needs of investors. The courts should adopt a more customer-focused approach in order to clear cases quickly. Weak cases should be disposed of or sent to arbitration and civil procedure rules amended to prevent abuse.

5.4.4 Developing and Strengthening the Domestic Private Sector

In order to increase the absorption capacity of foreign technology, it is recommended that the government should develop and strengthen the domestic private sector. This is because a weak domestic private sector significantly reduces potential to benefit from technology transfer through foreign direct investment. Building a strong and dynamic domestic enterprise sector is likely to attract additional foreign technology as it demonstrates an economic climate conducive to investment. In Zambia, the domestic private sector is still at an early stage of development. Despite recent changes in policy-orientation favouring private sector development, local investors still perceive the current policy environment as unfriendly. The public-private sector dialogue and partnership of the Private Sector Development Plan could help in addressing this problem.

Lower interest rates are a basic pre-condition to domestic enterprise development. The positive movements observed since 2003 in this respect are encouraging and must be maintained. It should be noted, however, that falling interest rates do not automatically lead to greater availability of credit to local investors, in particular small and medium-sized enterprises SMEs. Banks may still consider lending to such enterprises as too risky. Therefore additional measures are needed to facilitate lending to SMEs such as mobilizing the support of bilateral and multilateral agencies, introducing venture capital financing and

creating a special financial institution assuming the role of an investment partner in new local investment projects. The government has to restructure its educational and training programmes with a view to creating a national system that meets the requirements of a market economy.

These efforts should be strengthened as many skills are still lacking. Investors, especially foreign ones, have to resort to importing skills, in particular management and specialised technical skills. There is therefore, a risk that an excessively restrictive practice of granting work permits could serve as an obstacle to foreign technology transfer to local industries. A better option would be to introduce incentives encouraging in-house training and skills development. The benefits of technology transfer for development could also be increased by the introduction of a linkage promotion programme to identify and upgrade local enterprises that have the potential to supply man power to foreign affiliates. Incentives to foreign affiliates to use local man power should also be part of such a programme.

5.4.5 Policies Towards Regulation of Foreign Investment

Foreign direct investment provides the greatest potential for hidden costs of technology transfer. It generally also involves the highest overt costs and greatest loss of independence in decision making. Policies which permit only a minority of equity ownership on new investment and a divestment on old can be designed to reduce these effects. Many developing countries regard foreign direct investment as the main means of securing the technology. But some have introduced restrictions on ownership in order to meet their technology objectives.

In some, majority foreign ownership is only permitted in limited sophisticated industries. In general, the aim of these policies seems to have been to regulate permitted equity ownership without adversely affecting the inflow of foreign investment and technology. The Andean pact, decision 24, for instance, provided for the divestment as well as minority ownership in new investments. According to the study by Mytelka the divestment requirements had worked very well in 1975. The U.S. direct investment does not appear to have been markedly affected by the decision as shown in the study

5.4.6 Taxation Policy

The tax system may be used to deal with the transfer pricing problem more directly by introducing taxes which will be the same irrespective of the prices of imported inputs or exported output. Two approaches are recommended. One is to impute the profits a company is making in a particular country by assuming them to be the same ratio to some known variable for instance, turnover or employment as worldwide profits are to worldwide turnover or employment. To be effective, this obviously requires that worldwide accounts are reliably known. A second approach is to introduce a uniform tax on all items so that irrespective of price manipulation the same tax will be paid.

A uniform tax rate levied on profits plus imported inputs plus royalty payments plus management fees less exports would achieve this. It would remove the tax incentive but not other incentives for transfer price manipulation, while eliminating the tax cost of such manipulation and consequently improving the terms of technology transfer in the case of direct investment. Some countries have prohibited subsidiary companies from deducting royalties in payment to parent companies in calculating tax liability, which is a first step in this direction.

5.4.7 Strengthening International Codes of Conduct

If developing countries are to benefit from technology transfer, it is recommended that they should engage in negotiating International Codes of Conduct both with respect to multinational corporations and to the transfer of technology. These codes are intended to set standards for behaviour in the case of MNCs in relation to disclosure, taxation, and employment behaviour among other things. In the case of the code of conduct for technology transfer, it is in relation to the payments for technology, prohibition of restrictive practices and so on. A major issue however, is whether the codes should be mandatory or voluntary. If they are voluntary their impact is likely to be minimal, although they may perform an educative role and encourage national action where major departures from the code are noted.

Some have argued that mandatory codes might impede progress in developing countries since a general and widely accepted code would have such a low common denominator that it would actually retard certain changes in the third world. It has been recommended that these

codes should form part of a wider international investment regime. The aim of such a regime would be to provide an international framework in which foreign investment and technology transfer would be regulated. The regime, it is believed would reduce uncertainty and should include features such as guarantees and insurance. This would provide for the fairer distribution of benefits and costs of technology transfer, and would thus encourage the regulated flow of technology and finance, thereby benefiting all three parties MNCs, developed countries and developing countries.

5.4.8 Policies Towards Technology Contracts

The policies just discussed are concerned with technology transfer in the form of direct investment. But as ownership restrictions become effective, technology transfer increasingly becomes an arms length transaction between the national companies and foreign suppliers. It then becomes important to regulate this so as to prevent this form of technology transfer having the undesirable effects described. To this end, developing countries should begin to intervene actively in the flow of technology by establishing national registries of technology, reviewing and renegotiating technology contracts, and outlawing various restrictive practices. These policies may be designed to have the joint effect of increasing the bargaining power of national companies, reducing costs of technology transfer, protecting local technological developments, increasing the learning effects of imported technology and reducing the loss of independence in decision making. As suggested above, some of the objectives are mutually reinforcing.

It is recommended that national registries should require the registration of all technology contracts with foreign suppliers. This registration should only be permitted after government approval which should only be given if the contract fulfils certain conditions and is on reasonable terms. To achieve this it is recommended that in Zambia the legislation should prohibit undesirable technology transfer agreements as follows:

- (a) When the purpose is to transfer technology already freely available in the country and when the price is unjustifiable. Here the objective is reduction of costs and protection of local technology.
- (b) When provisions are included which permit the supplier to regulate or intervene in the administration of the transferee and when there is an obligation to assign to the

supplier of the technology the patents, trademarks, innovations or improvements received by the transferee. This will increase learning and independence.

- (c) When limitations are imposed on technological research or development and when there is an obligation to acquire inputs from any given source. This equally reduces costs and increases independence.
- (d) When exports are prohibited against the best interest of the country and when the use of complementary technologies is prohibited. Here the objective is to avoid costs, increase independence and learning effect.
- (e) When there is an obligation to sell exclusively to the supplier of the technology and when the transferee is required to use permanently, personnel designated by the supplier.
- (f) When the volume of production is limited or sale or resale prices are imposed and when the transferee is required to appoint the supplier as exclusive sales agent in Zambia.
- (g) When unreasonable terms of duration are established and when the parties shall submit to foreign courts for decisions in interpreting contracts, this is intended to enhance national independence in decision making and reduce costs.

It is hoped that if legislation in Zambia can address the above concerns, the country can benefit a great deal from technology transfer. A similar approach has been adopted in Mexico and it is claimed that the policy has substantially reduced foreign exchange costs of technology, opened export markets, increased tax revenues, reduced prices of capital goods and produced growing consciousness among Mexican entrepreneurs, who have understood better the importance for productivity and profits of obtaining full information on technological alternatives, conducting a careful evaluation and selection of products, processes and licensors and negotiating terms of contracts from the strongest possible position.

5.5 Legal recommendations

5.5.1 Strengthening Legal Framework Regarding Technology Transfer

The Zambia Development Agency Act provides in its section 5 (2) (t) that the Agency is given the task of encouraging and promoting the transfer of appropriate technology and promote public understanding of matters relating to industry development and productivity. This provision is inadequate as it does not comprehensively cover all essential areas in the transfer of technology. For instance, it is silent on the prohibition of restrictive clauses that technology exporters usually insert in technology transfer agreements. Besides, it does not set out positive conditions which investors may be required to include in their technology transfer agreements. It is therefore, recommended that the Act must be amended to include provisions requiring the insertion in technology transfer agreements positive conditions such as the amount and source of capital, the size of a project, the need for continuous disclosure on the implementation of the project, the nationality and number of shareholders, the training of Zambians, the utilisation of local raw materials and the prevent of environmental pollution.

It is further recommended that licensed technology should utilise as much as possible local resources including raw materials, labour skills and supervisory personnel and that parties should be clear about information to which the recipient is entitled. The agreements should indicate whether everything the proprietor owns in a specific field is included or only certain versions or embodiments thereof and also what rights if any the recipient may have to improvements or additions to the technology that becomes available to the proprietor in future. Furthermore, there should be lawyers who are trained in the field of industrial property specifically to help advise on terms to be included in the agreement and how to bring about actions against infringers. There should also be well trained international lawyers at Zambia Development Agency to advise on international law matters since transfer of technology is between nations.

In Chapter IV the study reviewed the various pieces of legislation relating to technology transfer in Zambia. It was concluded that the available law does not contain comprehensive provisions relating to technology transfer. This is indicative of the fact that government has not taken keen interest in the process of technology transfer. It is recommended therefore, that the government should seriously get involved in the process since its role is very crucial and of great significance. The UNIDO is of the view that governments in developing

countries should formulate laws for the growth of technological capacity of effective utilisation and developments of industrial technologies suitable to their effective industrial sectors.

That this requires a national technology plan which should facilitate the evaluation and upgrading of traditional technologies, the effective acquisition, absorption and adaptation of foreign owned technology and the development of innovative process and techniques, it is recommended that the essential ingredients of such a plan and legal framework could comprise identification of technological needs in critical and priority sectors in each economy. Secondly, the development of an effective technological information and dissemination system for identification and evaluation of technological alternatives and diffusion of innovations and adaptations. Thirdly, the development of national technological service capacity including design and engineering prototype testing and quality certification.

5.6 Conclusion

This study has examined critical issues of policy and law on the role of foreign direct investment as a vehicle for technology transfer to developing countries with particular emphasis on Zambia. Fiscal incentives, technology transfer mechanisms, costs and benefits of technology transfer and factors that deter foreign technology from Zambia were examined. It was argued that legislation on its own is not sufficient to attract foreign technology. It was further argued that in attracting foreign technology to Zambia, there is need also to look at the socio-economic, political and cultural climate in the country. Indeed to appreciate fully the arguments raised in this study on technology transfer, there is need to understand first the nature and agents of technology transfer. Secondly, there is need to understand the nature of international trade within which technology transfer occurs and thirdly, the terms and conditions of technology transfer.

Generally, multinational corporations have centralised operations. Their subsidiaries are integral units of the group. The group is in turn controlled by the parent company. Multinational corporations have economic power to finance research and development. Patent laws are the framework through which multinational corporations maintain their monopoly over technology. To this extent, multinational corporations usually have stronger bargaining power than the host country when it comes to negotiating technology transfer

agreements. For multinational corporations, the suitability of technology will depend on the economic viability and technical soundness of the technology.

Furthermore, because of the market dominance of multinational corporations in international trade, the host country may not have information on other sources of technology transfer. This makes it problematic for the host country to regulate effectively against restrictive business practices and contractual terms such as grant-back provisions. These provisions stipulate that any improvement made by the recipient of the technology to the technology goes to the credit of the supplier of the technology without any payment being made to the recipient of the technology.

In the final analysis, to regulate the activities of multinational companies in foreign direct investment and technology transfer, it is important to consider three levels of regulation. The first level is the national level. This involves regulation through the application of municipal laws and the implementation of government policy. The second level of regulation relate to the application of regional treaty obligations. Here one must also consider certain aspects of practice and issues of customary international law in the region. The third level of regulating foreign technology in Zambia transcends the national and regional boundaries. This looks at regulation at the international level. Regulation at international level calls for the application of conventional and customary international law. In the present work, there is need to concentrate on regulation at the national level. The study of all the three levels of regulating foreign technology would comprise a separate dissertation altogether. The scope of discussion is vast and the area still requires contribution from other scholars in the field of social sciences.

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