

TRANSFER OF TECHNOLOGY

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Lic. Thesis

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ABBREVIATIONS

Names of Organizations

- UNCTAD : United Nations Conference on Trade and Development
- U.N. : United Nations
- OECD : Organization for Economic Cooperation and Development
- EEC : European Economic Community
- CSTD : Committee on Science and Technology for Development
- UNCSTD : U.N. Conference on Science and Technology for Development
- ACAST : U.N. Advisory Committee for the Application

Other Abbreviations

- DC : Developed Country
- LDC : Less Developed Country (Developing Countries)
- R & D : Research and Development
- MNE : Multinational Enterprise
- MNC : Multinational Corporation (=MNE)
- FDI : Foreign Direct Investment

The institution that most changes our lives
we least understand, or, more correctly, seek
most elaborately to misunderstand.

That is the modern corporation.

J.K. Galbraith
The Age of Uncertainty
(1977, p. 275)

INTRODUCTION

Technology being the "key to the progress of mankind" (83:p.41) is expected to pave the way to economic development and narrow the gap between the developed and developing countries, if it could be transferred through proper channels, such as patent-license agreements or foreign direct investments. The key role in the transfer of technology was expected to be played by the MNEs, given the characteristics of free-market enterprise economies in terms of property relations and ownership rights. Transfer of technology, especially through FDIs, accelerated after the World War II. The major technology exporters were, naturally, the MNEs of DCs, primarily of the U.S., while the major technology importing countries were again the DCs due to their stable and large markets with relatively higher purchase-power as well as more or less identical consumer tastes. In contrast to the common belief by non-layman, the share of flow of FDIs to LDCs was/is considerably lower, but growing rapidly.

Technology transfer has many positive impacts on the economy of technology importing countries. Access to new technological know-how, addition to domestic productive capacity and employment generation are just a few. Regarding the inadequacy of essential factors of development such as physical/financial capital, foreign currency, infrastructure, high-level manpower, etc., FDIs were expected to fill in the gap, to some extent, at least, and make significant contributions to the development of national economies of LDCs. But it was soon to be discovered that the technology market contained many imperfections. Various factors were restricting the full-utilization of the transferred technology in host countries. Besides its indisputable benefits to the importing country, the FDI also had some adverse impacts on important issues such as income distribution, employment generation and foreign currency reserves. There were even claims that the costs by far outweighed the benefits generated by investment or even the "non-transfer" of technology implying that the host country had no positive benefits in terms of having access to the advanced know-how in spite of far reaching incentives and facilities provided for the foreign investors. (For a more detailed discussion, see Chapter-III).

On the Structure of Study

Throughout this study, we will use some concepts such as FDI, MNE, LDC, etc., meaning what it literally and commonly implies to the scholars, with no political / ideological attachment. For instance a FDI takes place when a business firm invests in one or more foreign countries to undertake local production. Portfolio investments are not subject of this study. When we refer to MNEs, we simply imply a business firm with production facilities in two or more countries, but by no means ownership by many nations, with the exception of a few firms like ABB, Unilever, etc.

A great deal of research exists on the nature and magnitude of the transfer of commercial technology to LDCs displaying both the positive and negative impacts on the economy of host countries. Regarding the importance and vitality of the technological capabilities on the achievement of economic targets, particularly for the LDCs, there still seems to be some scope and need for further research analyzing the problems from different angles with the purpose to reduce and eventually eliminate the technology market imperfections and to increase the global utility of advanced technologies. Moreover, there still seems to be need for new approaches as well as globally applicable and acceptable economic policies to maximize global welfare.

It is for this purpose, i.e., to shed some more light on the transfer of commercial technology through FDIs and the market imperfections this study is undertaken. Specifically, we will seek the answers to questions such as; the nature and significance of contributions and adverse affects to the economy of host countries generated by FDIs, in our case the LDCs. The positive and negative impacts, including both direct and indirect ones, will be studied thoroughly in Chapter-III. It is the author's belief that indirect costs, especially the costs resulting from the use of restrictive clauses contained in package-deals constitute a major obstacle to maximize the benefits from imported foreign advanced technology. It seems that the package deals provide the premises for extensive controls over production conditions, distribution, exports, etc., in the host country. Thus, the discussions in Chapter-III will constitute the primary objective of this study.

Chapter-I is aimed to serve as a reference chapter, especially for those who are less familiar with the technology transfer matters. It will contain some general introductory knowledge on important issues such as "appropriate" vs. "inappropriate" technology. Chapter-II is aimed to provide some more

thorough discussion on the key concepts relevant to our study like "Cost of technology" and "Channels of transfer". Chapter-IV will contain mainly the author's own remarks and some policy proposals based on previous Chapters' findings.

On the Data

In Chapter-III, we will focus our efforts on utilizing the available empirical data to analyze the nature and magnitude of especially indirect costs resulting from the package-deals. Collection of our own up-to-date data would naturally be highly desirable but also rather time-consuming. Besides, there is abundant data collected by various international agencies (e.g. UNCTAD) and individual researchers on the issue to serve our purpose. There seems to be no reason to doubt the quality of these available data in general.

CHAPTER - I

TECHNOLOGICAL BACKGROUND OF LDCS

Technology is the basis of economic growth and competitiveness. "Increased availability of technical knowledge greatly aided the late developers in the West. But it does not necessarily follow that advanced technology is similarly helpful to the late-comer nowadays." {49:p.66} The reason for this is that the advanced technology of the DCs has been developed in response to the specific conditions prevailing in these countries, characterized by high incomes, economies of scale, abundance of capital and highly skilled manpower. DCs have a well-trained and disciplined labor-force, are familiar with the latest developments in technology, and possess a sound technical infrastructure suitable for efficient absorption or adaptation of the latest technical advances. Actually, there are insignificant political and socioeconomic differences in developed areas. The situation in the developing countries, however, seems to be the reverse. The supply of technical and managerial skills is limited, and the technical absorptive capacity of advanced technology is inferior. Scarcity of foreign currency is another dilemma. Moreover, various religious, political and traditional values may exert adverse impacts on the implication / adaptation of foreign technology.

Regarding the transfer of technology to developing countries, the degree of success depends partly on the nature of transactions and partly on the technical absorptive capacity of the recipient country. The outcome of the former is mainly influenced by the negotiations between the parties involved. But the latter, the absorptive capacity of the recipient country, prerequisites huge investments in both human capital and infrastructure as well as long-term consistent economic policies. Because "a society's capacity to adapt itself to the requisites of advanced technology and to adapt the advanced

technology to its own circumstances and objectives, as well as its capacity to innovate, will depend in part on the intellectual skills, the acquired knowledge and know-how, the problem solving competencies -in a word, on the cognition possessed by those who constitute that society."{62} As Singer points out "a country which has no national capacity cannot know what technology is available to be imported, what the most suitable technology for itself is, where the best sources for such technology are, and what the best forms are in which such technology should be embodied -let alone bargain effectively about the terms on which such imports take place."{48:p.399} As a result the transaction in technology may produce many undesired impacts on issues such as employment, foreign exchange, income distribution, etc. What criteria, then, should a country use to evaluate the appropriateness of a foreign technology? What are the main characteristics of an (in-) appropriate technology?

Inappropriate Technology:

Advanced technology of the industrialized countries is an expression of their development level. It is produced by the rich countries where markets are large, real-wages relatively higher and capital relatively abundant. The LDCs, on the other hand, are characterized by limited domestic markets, low incomes, abundant labor-power, and scarcity of capital, foreign exchange and skilled man-power. "The imported technology may be inappropriate because it makes intensive use of relatively scarce factors of production (e.g., foreign exchange) and leaves abundant factors idle (e.g. labor); or because it ignores the implications of the nature of the output (e.g. luxury products); or of the nature of social organization (e.g. the unequal distribution of income) which it helps to perpetuate."{67:p.6}.

The experience of an Australian firm sets a typical example of a case where the foreign investor failed to take advantage of the local factor endowments. The firm had a canned-milk plant in Indonesia where "the cans were boxed in small crates made of wooden slats by subcontractors working on the factory site. As production grew, the subcontractors could not keep up supplies, principally because poor transportation from the outer islands made the supply of wood irregular. The milk-processing firm accordingly encouraged another Australian company to take advantage of the "pioneer" investment incentives to produce corrugated cardboard boxes to

replace the wooden crates. Another “modern” factory was built from imported materials and the production process was also capital-intensive, but the imported inputs were duty free, and the firm had a tax holiday that enabled it to depreciate its investment quickly. Its market grew rapidly because other foreign firms were also unable to handle the wooden- crate problem, and local manufacturers followed their example to be “modern”. The relatively simple alternative steps that would have been required to support the subcontractors' capacity to supply the wooden crates on a sustained basis were not beyond the Australian manager's capability, but the desirability of doing so was beyond his understanding. As in Australia, it seems that in a wide range of products, domestic firms are likely to be more adaptive than even the small Australian foreign investors." {1:p.122}

The most frequently used channels of technology transfer are;

- 1- direct foreign investment; and
- 2- patent/licence arrangements.

The latter is beyond the scope of interest of this study, thus will be ignored. As to the former, e.g. FDI, the foreign investor would have rather little incentives to adapt its technology to the local conditions. In fact, regarding the extensive incentives such as high trade barriers or tax-holidays, the foreign investor would most likely be rather happy with how things are. If the host country is pursuing an export-biased growth strategy, market forces would encourage the application of more compatible technologies, assuming the presence of realistic factor prices and interest rate. But, if the foreign investor is only interested in the exploitation of cheap labor-power of host country, in other words if production is undertaken solely for the export purposes, it would create a situation what the scholars refer to as the "Non-transfer" of technology. In such a case, one cannot talk of appropriateness either, though the production method might be rather labor-intensive. The major benefit accruing to the host country would be the generation of new employment opportunities.

Regarding the global transactions of MNEs, their interests might well be on the collision course with the national interests of host countries at certain occasions. However, putting the blame entirely on the foreign factors in case of disputes would be rather unfair, to say the least. Many of the problems encountered in the host countries may very well be due to the inappropriate economic policies implemented in those countries or the ignorance or incompetence of decision-makers. It has often been observed

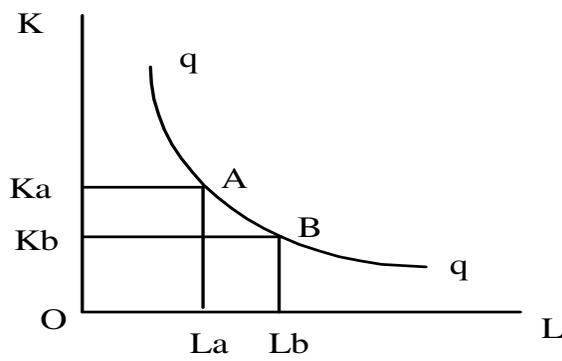
that in spite of the fully awareness of the acute problems of unemployment, foreign currency shortage, etc., the decision-makers in LDCs show a strong tendency towards the transfer of most up-to-date technologies. The inappropriate economic policies combined with the present division of international labor based on the historical developments, and the weak bargaining position of LDCs in determining the conditions of technology transfer seem to be the major causes of import of inappropriate technologies to developing countries.

Appropriate Technology

"The selection of appropriate technologies for developing countries is a difficult task for those countries because of their generally low level of technological sophistication and the scarcity in them of the skills required to appraise production techniques and to conduct negotiations either from the viewpoint of an individual firm or from that of the economy as a whole. These difficulties may be increased by the absence, weakness or contradictory nature of industrial policies in the recipient countries." {67:p.6} In order to master the process of technology transfer, the recipient country must acquire/improve its absorptive capacity and adapt a consistent long-term economic policy at both micro and macro levels.

Labor-intensive technology has often been proposed as the most appropriate technology for developing countries for its exclusive emphasis on the utilization of abundant labor-power. But these arguments in favor of labor-intensive technologies generally fail to distinguish between relative economic efficiencies of alternative production methods. "While labor-intensive methods are technically feasible for a wide range of construction activities, for which they achieve product standards equal to those of more capital-intensive methods, traditional labor-intensive methods are not economically competitive even at extremely low wage rates." {88:p.39} Theoretically, however, it is possible to substitute labor for capital without affecting the economic efficiency. (see Figure :1) It is possible, though not probable, to choose any degree of combination of factors, be it point A or B on isoquant, and still get the same output. But in practice, it is sometimes hardly feasible to substitute labor for capital and be economically efficient, while maintaining the same quality, precision and intensity of production.

Figure 1: Output with different K/L ratios



qq denotes the isoquant

K " - " capital

L " - " labor

AB " - " different ratios K/L producing the same quantity

According to another argument, the best choice of technology would be the intermediate technology. For Schumacher (1975), the term intermediate implies "that it is vastly superior to the primitive technology of bygone ages but at the same time much simpler, cheaper, and freer than the super technology of the rich." {60:p.154} He claims it to be "conducive to decentralization, compatible with the laws of ecology, gentle in its use of scarce resources, and designed to serve the human person instead of making him the servant of machines." {60:p.154} Dickson defines the intermediate technology as "a set of technologies lying midway between the capital-intensive technologies usually exported to the underdeveloped countries by the industrialized nations, and the indigenous technologies that the underdeveloped countries already possess." {16:p.148} While Schumacher's definition merely depicts the in-betweenness of technology between the outmoded ones and the most advanced ones, Dickson assumes the emergence of labor-intensive intermediate production methods from the existing indigenous technologies.

For Erdilek; "There can be different criteria for 'appropriateness' of technology such as:

- (i) Maximization of net output, consumption, of the rate of growth and employment;
- (ii) Minimization of regional imbalances, balance-of-payments deficits and of inequality in income distribution;

- (iii) Maximization of economic and political independence and self-reliance, of resource productivity and improvement in the quality of life." {20:p.64 }

In a broad sense of meaning, the appropriate technology can be defined as the productive knowledge most suitable to the local socioeconomic environment, i.e., to the economic, organizational and technological infrastructure of the recipient country. It ought to be easy to master and compatible with the quality and quantity of resource endowments. It should be able to generate new jobs for the abundant able-bodied men, economically efficient with respect to markets, technically compatible with existing skills, promote backward- and forward-linkages, and preferably capable of producing commodities for export to earn foreign currency.

"Choosing the "right" technology involves not merely choosing appropriately -in relation to other policy considerations and decisions- from among a given range of techniques but also considering the effects of the technology on the possibility of evolving new techniques suited to the developing country's specific resource conditions and ecological structure." {67:p.7} Receptability of the host country, including the technical, managerial and organizational abilities, an appropriate and consistent economic policy and improved bargaining power are the elementary factors for the successful choice and transfer of appropriate foreign technologies.

CHAPTER - II

II-1: THE CONCEPT OF TECHNOLOGY AND DEVELOPMENT

Development implies continuous and sustained economic growth in terms of per capita production or income or whatever the yardstick of measurement is. An economy can grow through various ways, one of which, perhaps the healthiest way, is through the technological change, i.e., improved productivity and/or introduction of new commodities. Empirical evidence indicates that the fastest growing enterprises are the ones making best use of technological advances. Most dynamic industries of the economy are most research intensive industries where technological change is rapidly and continuously taking place. Therefore, it is no surprise that the globally operating MNEs are, in general, found in those dynamic, research-intensive industries, which sometimes require funds greater than the total national income of some nation-states.

Being basically technology importer, the LDCs resort to the MNEs in the first hand to acquire the advance technology, in order to increase domestic productivity and to accelerate the economic growth. Although there seems to be no monopoly in the technology market, bargaining power of the technology-seller MNEs vis a vis the developing country technology buyers is highly disproportion-ate in favor of the former, due to the latter's' deficiencies in skilled manpower and technological infrastructure as well as national economic policies.

Bearing in mind the key role assigned to technology in the process of development and the circumstances in international technology markets, the concepts like science and technology, latter's distinction from, and relation to science, the distinction between invention and innovation become important aspects of our study, which will be analyzed in the following sub-chapter.

Science

Science can be defined as the pool of basic knowledge providing the commercial interests with essential premises to invent and/or to develop new commodities and production processes. There are some similarities but no clear distinctions between the concepts of science and technology. In general, science seems to deal mainly with the acquisition of knowledge as such while technology is oriented toward the end use through commercial exploitation of knowledge. The contribution of scientific research to technical knowledge and, in some cases vice versa, is indisputable. "Science without the by-play of technology becomes sterile while technology without science becomes moribund." {36:p.6} Scientists are usually trained in disciplines such as organic chemistry or theoretical physics and generally publish their findings based on rigorous experiments in scientific journals and books. Their primary concern is not material reward but self-satisfaction and academic recognition in their field of study.

A scientific research is either basic-research oriented or applied -research oriented. The former covers the types of research undertaken primarily for the mere sake of science and is occasionally referred to as the pure research. The scientist would neither have any particular end-use in mind nor any material gains except the acquisition of knowledge. The greatest satisfaction to him would arise in conjunction of his contribution and recognition by his colleagues. Applied-research, on the other hand, is committed for a particular end-use. The acquired knowledge by the scientist may reflect the needs and wants of the society with the ultimate aim to make profits from its commercial exploitation. In other words, applied-research might provide the basis for eventual commercial inventions or further development of a new commodity or a production process. The distinction between the applied research and technology is rather vague.

Technology

The concept of technology is difficult to define, according to Fatemi (1976), while UNCTAD regards it as "neither vague nor mysterious." {67:p.5} For Granger (1979), technology is "action oriented, concerned with doing things,

solving practical problems, the creation of goods and services that are marketable in the commercial sense or in the sense that they fill the perceived needs of nations as a whole."{47:pp.8-9}. Another UNCTAD study postulates that "technology is the key to the progress of mankind and that all peoples have the right to benefit from the advances and developments in science and technology."{83:p.1} In this study we will define the technology as the set of knowledge, skills and equipment utilized to produce commodities or to render services responding to practical needs and wants of the community.

Technology does not only assist us to satisfy our material expectations but also increase our control over the environment in which we live. By combining productive skills and knowledge with various materials and equipment, it contributes to improve the quality and the standard of living of mankind.

Technology is usually produced by people trained in disciplines such as mechanical or electrical engineering and sponsored by the commercial interests. The findings are most likely to be patented as both the researcher(s) and the sponsor(s) expect material rewards from its application. However, it is not always fully utilized for the benefit of mankind. "Various factors are responsible for the limited utilization within developing countries of existing technical change. Among them the difficulties imposed by the manifold imperfections of the technology market are perhaps among the most serious."{69:p.31}

Technological change is a highly dynamic and continuous process. It sometimes minimizes the costs of inputs by saving material inputs, as in the case of computers, or by increasing productivity per employee, and sometimes re-cycles the waste materials for re-use. All these applications spur the economic growth. The material well-being of the industrialized countries was initiated and later consolidated by the accumulation and, consequently, profitable application of the productive knowledge and indigenous resources. At some occasions, the technological change had spurred economic growth and at some occasions, the vice versa. According to a study by Solow covering the period 1909-1949 in the non-agricultural private sector in the U.S.A. technical change accounted for around 90 percent of the doubling of production.{in 27:} Although the figure seems to be over-estimated, it nevertheless indicates the significance of technical change in the process of economic growth.

From R & D to Mass-Production

A technical change would be complete after the successful completion of 3 phases:

- 1- Invention;
- 2- Innovation; and
- 3- Mass-production and consumption.

"An invention is a new idea, an original way of utilizing physical and chemical phenomena, or a combination of technical operations already known into a new process."{27:p.69} It is the fruit of a systematic research work aimed at the acquisition of productive knowledge. An innovation, on the other hand, "is the embodiment of an invention in the productive process and is, as such, a crucial step in economic change."{14:p.76} After the innovation phase, the productive knowledge becomes tangible possessing a commercial value. Usually, inventions precede the innovations but occasionally the innovations are "the precursors of inventions."{27:p.116} For instance, assume the presence of "a clear idea of an innovation but the invention needed for realizing it has not yet been made..."

The envisaged innovation is here a precursor of the invention.....

The reduction of the size of computers by the use of integrated circuits illustrates the saying that necessity is the mother of invention."{27:p.116} However, the innovation process is usually a more time and resource consuming process than the initial research phase. The final chain of the technological change is the step from prototype to mass production for end-users.

The innovation (development) of an invention is inherently a risky process. The longer it takes for development, the higher would be the costs and risk. Technical and commercial circumstances are the major determinants of development process. The data on the past technological expenditure indicate that all major breakthroughs have consumed enormous financial resources and time. According to studies by Enos, Lynn and Mansfield, in the areas these authors studied, "the most important innovations follow inventions after an average time-lag of between ten and fifteen years, the standard deviation from this being a period of five years in the petroleum industry and sixteen years in various other fields. The time-lag is shortest with mechanical innovations, and longest with electronic ones; furthermore, it is shorter for consumer goods than for industrial ones..... On the whole, the average time-

lag seems to be decreasing."{27:p.117} As for the costs, Frame showed that, "in 1981 the R & D budget was \$ 2,250 billion for General Motors, \$ 1,718 billion for Ford, \$ 1,612 billion for IBM, \$ 1,686 billion for AT&T, \$ 844 million for Boeing, \$ 814 million for General Electric, \$ 736 million for United Technologies, \$ 615 million for Eastman Kodak, \$ 631 million for DuPont, and \$ 630 million for Exxon."{23:p.85}

Sources of Finance

Technical R & D is carried out and / or financed by four major sources:

- 1- Private business enterprises;
- 2- Public (state) enterprises;
- 3- Institutes of higher education; and
- 4- Non-profit organizations (such as Cancer Fund or Charities)

R & D carried out by the private business enterprises is primarily for commercial interests with the ultimate purpose to introduce either new methods of production or new commodities into the market. In order to survive in the competitive markets, the modern corporations, and especially the MNEs, constantly strive to reduce the costs of production either by using less inputs or by increasing the output per employee. Therefore, the promotion of newer and more advanced techniques both in consumers' and producers' goods industries are very essential aspects of corporate growth. Thus competitive enterprises devote substantial amount of their incomes on further R & D. However, not necessarily all R & D work is carried out within the enterprise. At occasions, organizations such as universities may be subcontracted to carry out partial or total R & D work on behalf of the firm. But private enterprises are the primary source of inventions/innovations in free-market economics.

Public (state) enterprises pursue, more or less, the same kind of logic as private enterprises in their operations. However, at certain instances the public benefit of their output may precede the commercial interests, reflecting the economic policy of rulers, thus reducing the role of profitability to secondary importance. But, in general, profitability is the primary goal of their activities. Thus, manufacturing public enterprises too, have a tendency to introduce more advanced and efficient technologies in order to survive the competition in the competitive markets.

Institutes of higher education often undertake R & D to meet the needs and wants of business community financed by various kinds of public and private funds. But pure scientific research i.e., the research just for the sake of knowledge, also consume substantial human and financial resources at such institutes. And the non- profit funds and organizations primarily aim to improve the well-being of living objects and their environment.

Table II-1 Industrial R & D by Source of Funds, Late 1970s (%)

| | Industry | Private | | |
|----------------|----------|------------|------------|---------|
| | | Government | Non-profit | Foreign |
| France | 66.50 | 25.30 | 0.30 | 7.90 |
| Japan | 97.90 | 1.90 | 0.10 | 0.10 |
| United Kingdom | 62.80 | 30.90 | - | 6.30 |
| United States | 64.70 | 35.30 | - | - |
| West Germany | 80.40 | 15.80 | 0.10 | 3.60 |

Source: National Science Board, Science Indicators 1980;
{23:p.30, Table:2-4}

Table II-1 indicates that major part of industrial R & D in five developed countries was financed by private sector, in late 1970s. Japan relied heavily on the private sector for R & D, while public sector R & D in United Kingdom and United States was about 50 percent of private sector R & D. Western developed countries carry out around 99 percent of all R & D in the non-socialist world. Certainly, there is a strong correlation between the stage of industrialization and the R&D activities of a country. Table II-2 shows that developed countries spend around 2 percent of their GNP on R&D. "At the outset of the 1980s the United States devoted roughly 2 percent of its GNP to R & D. This amounted to more than \$ 60 billion, a figure that is roughly the same as the total GNP of Denmark; "{23:p.24} greater than the GNP of many individual LDC.

Table II-2 International Comparison of Some Basic Indicators of Scientific and Technological Activity, Late 1970s.

| | Scientists & Engineers* (thousands) | Total R&D (percent of GNP) | Civilian R&D (% of GNP) | Scientific papers publ. (thousands) | Number of Nobel Prize Winners 1955-1980 |
|----------------|-------------------------------------|----------------------------|-------------------------|-------------------------------------|---|
| France | 68.00 | 1.76 | 1.35 | 15.00 | 6.00 |
| Japan | 273.00 | 1.93 | 1.87 | 14.00 | 2.00 |
| United Kingdom | 80-90 | 2.11 | 1.47 | 25.00 | 25.00 |
| United States | 621.00 | 2.25 | 1.57 | 104.00 | 83.00 |
| Soviet Union | 1,300 | 3.44 | 0.7-2.0** | 124.00 | 8.00 |
| West Germany | 111.00 | 2.36 | 2.18 | 16.00 | 8.00 |

Sources: Manpower and funding data from National Science Board, Science Indicators, 1980 (Washington, D.C. Government Printing Office, 1981. {23:p.25, Table:2-1 }

* Full-time equivalent

** Estimates of Soviet R&D dedicated to defense vary from 40-80 %

However, regarding the LDCs, the extent of R & D activities would be an inappropriate indicator of their development level. Because, first of all the LDCs are not technology producers but importers. They buy the technology from advanced industrialized countries in various forms. R & D carried out, if at all, in a LDC is often for the purpose to adapt the advanced technology to local conditions. In Turkey, for instance, R & D expenditures, as the ratio to combined total sales of foreign companies, were estimated to be 0.158 percent in 1974, 0.174 percent in 1975, and 0.151 percent in 1976, according to a survey by the Ministry of Commerce. {20:p.80} As a result of low degree of R & D activities in LDCs, we often observe the under-utilization of human capital (of well-trained manpower) especially of those minds trained at the developed country institutions. It is not uncommon to see a well-trained engineer practicing duties of a technician, or doing paper-work in developing countries.

Following the WW II, Japan pursued an economic policy of massive import of advanced technology from the relatively more advanced nations. After successful industrial policies of adaptation and further development of imported technology, Japan today ranks as one of the most technologically advanced nations, leading in some major research- and skill-intensive fields.

II-2: COST OF TECHNOLOGY

The development process from invention to innovation for industrial applicability requires the engagement of physical, financial and human resources, given the appropriate technical infrastructure. Therefore, the development process of a new product or a new production method is a rather costly process.

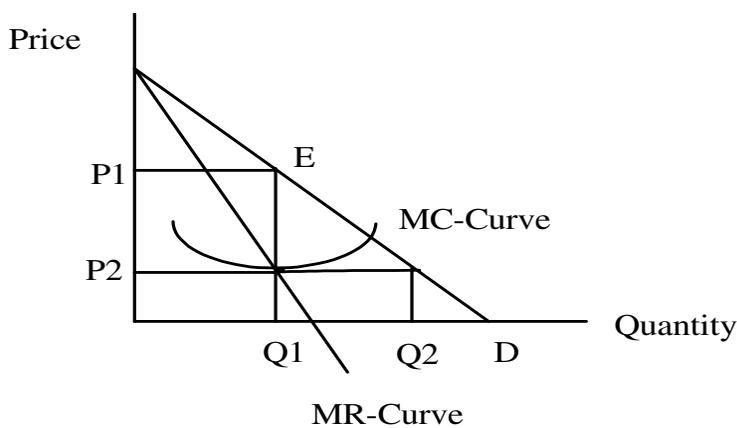
There must exist adequate incentives for the factors of production to be engaged in such a process and consequently, adequate compensation for their efforts. In a market economy, the patent rights system guarantees the reward for efforts in terms of returns on the investment. "A patent is a legally enforceable right granted by virtue of a law to a person to exclude, for a limited time, others from certain acts in relation to a described new invention." {69:p.1} The owner of the new technical knowledge is thus granted the right by a state authority to enjoy the fruits of possessing a new productive knowledge until the competitors catch up. Meanwhile, the owner of new technology enjoys a monopoly power over its production, distribution and price. The patent right excludes the others from manufacturing, using and selling the patented knowledge without prior approval by owner. The patent system does not only stimulate research for new productive knowledge by rewarding its owner but also eliminates unnecessary efforts in the same field as others would find out that their idea has already been developed and, as the patent is disclosed in a public document, it stimulates further improvements (development) on the new productive knowledge by others.

What Should Be The Price?

If the productive knowledge was for sale on markets, its price would probably be somewhere close to its maximum possible price, e.g. at p as in Figure II-1 assuming that the technology owner has monopoly position. Let D denote the demand, MR the marginal revenue, p and p relative prices, and MC the marginal cost, the social gain arising from the introduction of new technology under monopoly would be the quantity represented by $O-q$, at price p , ceteris paribus. Social utility, as distinct from private utility, could be maximized by setting the price at p , thus increasing the availability of new technology from $O-q$ to $O-q$. But due to monopoly power of the technology owner, the price is

most likely to be set at p or close to it, as the MR-curve intersects with the MC-curve at point E.

Figure II-1 Hypothetical Price Curve of a Monopolist Technology Owner



However, once a new productive knowledge has been developed, its exploitation by others does not diminish its availability nor does it preclude the use of it by others. In a sense, the new productive knowledge becomes a public good. Thus, to acquire optimal utility from the new technology, it ought to be available free of charge to other potential users. As the marginal cost of exploitation of new technology is zero to the owner, the only cost that occurs and therefore, deserves, compensation would be the spreading costs of new technology. Analogously, the optimum price should be set at close to 0. But, this represents an ideal case, in contrast to daily, common business practices in free market economies. Such an ideal case can only be realized if the new technology was to be owned and distributed through non-profit organizations.

In contrast to the ideal case, the common practice in the technology market is that it is bought and sold like any other commodity in the world markets in one of the manners as described below:

- "(a) In the form of capital goods and sometimes intermediary goods which are bought and sold in markets, particularly in connection with investment decisions;
- (b) In the form of human labor, usually skilled and sometimes highly skilled and specialized man power, with the capacity to make correct use of equipment and techniques and to master the problem-solving and information-producing apparatus;

- (c) In the form of information, whether of a technical or of a commercial nature, which is either readily available in markets or subject to proprietary right and sold under restrictive conditions." {67:p.5}

Often, the transactions in technology involve the mixture of all three forms described above. Thus, it becomes difficult to evaluate the actual cost accruing to the technology importing country. Some costs are statistically measurable but some costs occur in the disguised form, such as transfer pricing of import/exports, or costs arising from restrictive practices on imports, exports, etc. Such indirect costs involve both conceptual and verification problems. UNCTAD suggests distinguishing the direct costs from indirect ones in the manners described below.

"Direct costs:

- (a) Charges for the right to use patents, licenses, know-how and trademarks;
- (b) Charges for technical knowledge and know-how needed both in the pre-investment and in the investment stages and in the operation stage.

Indirect costs:

- (c) Charges through overpricing of imports of intermediate products and equipment ("hidden" costs or "price mark-ups"), some of which may not have market price;
- (d) Charges arising through profits on capitalization of know-how (equity participation in place of, or in addition to, other means of payments for the transfer of technology); dividends on these equity holdings are, therefore, to be regarded as, in part, payments for the transfer of technology;
- (e) Charges in the form of some portion of repatriated profits of wholly-owned subsidiaries or joint-ventures the establishment of which does not make specific provision for payments for the transfer of technology;
- (f) Charges through imports of capital and other technical equipment, the price of which usually allows for the exporters' valuation of the cost of technology." {67:p.24}.

The world as a whole could reach optimum utility if the productive knowledge could flow freely across the nations, but it is hardly likely to happen in competitive markets. So, any country intending to import technology must be prepared to pay a price for it above its marginal cost of

production. The actual price paid depends largely on the bargaining power of related parties and the economic policy of the related country.

In spite of the limited facilities and incentives, the researchers in developing countries also make some contribution to the pool of knowledge of international patent system. But the LDCs claim, according to Frame (1983) that "rather than stimulate invention, the system suppresses it in the Third World. To support their view they point out that the great bulk of patents held in the Third World countries are foreign owned (approximately 85 percent, according to one source), and that very few of these foreign-owned patents are actually worked -that is, put into production- in the patent-granting LDC (approximately 5 percent). Consequently, the patent systems in the Third World primarily benefit foreign businesses and foreign inventive activity".{23:p.160}

II-3: CHANNELS OF THE TRANSFER OF TECHNOLOGY

It is commonly acknowledged that technology is a vital and indispensable factor of sustained economic development. And for a price, it can be acquired from various sources in a number of ways. UNCTAD suggests 8 channels as follows:

- "(a) The flow of books, journals and other published information;
- (b) The movement of persons from country to country;
- (c) Education and training;
- (d) Exchange of information and personnel through technical co-operation programs;
- (e) Employment of foreign experts and consultancy arrangements;
- (f) Import of machinery and equipment and related literature;
- (g) License arrangements for production processes, use of trade marks and patents, etc.;
- (h) Direct foreign investment." {67:p.8}

UNCTAD's classification seems to be rather comprehensive but in this study, we prefer to classify the channels of technology transfer in three major groups:

- (1) Transfer of Knowledge [corresponding to (a) to (e) above]

- (2) Transfer of Embodied Technology [corresponding to (f)];
- (3) Transfer of Disembodied Technology [corresponding to (g) and (h), including joint-ventures]

Transfer of Knowledge

The scope of the transfer of knowledge ranges from the flow of books and journals to education/training of man-power both in DCs and LDCs. One has to distinguish, however, that what is to be transferred is "not" the productive knowledge on "how to produce" a commodity but knowledge on "how to use" efficiently the foreign technology. The acquired knowledge is rather useful for evaluation and classification among different technologies of similar kind. If we define the technology shortly as the set of productive knowledge, skills and equipment, the transfer of knowledge would constitute only some part of the first component of the set. Though it is an important aspect for the successful technology transfer, it is by no means a sufficient one. Transfer of knowledge contributes to the efficient utilization of indigenous resources and improves the absorptive capacity of the country. But in essence, it is rather distinct from the transfer of disembodied technology which involves access to, at least to some extent, commercial secrecy e.g. new commodities and/or production process.

The crucial role played by the human-capital in the development process is indisputable. Every scholar acknowledges its importance and encourages its promotion. Countries like Federal Germany and Japan could not have achieved their impressive post World War II economic performance in the absence of a well-trained and disciplined labor-force. Accordingly, the education / training of the labor-force of developing countries is of utmost importance in order to reach their development targets. But, "the training the students receive is designed for a high-income, high-labor-cost country. Not surprisingly it lacks an appreciation of the need to design products appropriate to low-income countries and to produce them by labor-intensive production techniques that will take advantage of the factor costs prevailing in these countries." {1: p.120}

Another major problem arising in conjunction with the education / training in DCs is the "Brain Drain" dilemma. Many articulate elements of LDCs trained in the DCs prefer to remain in the DCs instead of returning home, attracted by enormous material and non-material facilities offered to them. Regarding the

magnitude of the problem, one may even claim that there is a "Reverse Transfer" of technology to DCs. "Estimates made earlier by UNCTAD had indicated that between the early 1960s and 1972 skilled migration from the developing countries (consisting of engineers, scientists, physicians and surgeons and technical and kindred workers) to the three major developed countries of immigration-the United States, Canada and the United Kingdom-amounted to little over 230,000 persons." {74:pp.2-3} Including the 1973-76 period "gives a combined total for the three major developed countries of immigration of over 300,000 for the period 1960s to 1975/76." {74: p.3} However, these figures do not cover the unofficial migration, thus the actual magnitude of the problem is somewhat underestimated.

Also Western European countries benefited considerably from the Brain Drain. Countries like Turkey, Yugoslavia, Italy and Greece have been the major sources of the supply of man-power. "It has been estimated that nearly 115,000 developing country skilled migrants were employed in Western Europe as at early 1970s." {74: p.3}

Transfer of Embodied Technology

Also referred to as the "Direct Transfer" of technology or as the "Transfer of Product Technology", {26:} it occurs when a commodity containing the "features of a specific technology" is transferred (exported) to another country as a finished or semi-finished commodity. It is important to point out that what is transferred is still not the productive knowledge to produce a commodity but "a commodity" containing the built-in features of a specific technology in "disguised" form. In short, there is the mere transaction, e.g. sale/purchase, of a commodity.

A great deal global trade consists of finished and semi-finished commodities. In a sense, a massive amount of technology transfer takes place every day. Assuming an adequate degree of absorptive capacity and willingness, there is always a theoretical possibility for the importing country to discover the disguised features of a built-in technology in the imported commodity and consequently, to imitate /further develop it with some modifications (not to violate the patent laws). Contrera calls this possibility the "reverse engineering" process. With regard to the prevailing technical capabilities in LDCs, the reverse engineering process seems to be a phenomenon rather for the DCs, given their enormous technical and financial facilities. LDCs are

likely to achieve successful results in the imitation of less complicated and less costly technologies. Skill and research-intensive technologies are the major features of globally operating giant enterprises, and as such, they seem to be beyond the human/physical capabilities of LDCs, in general, in the short-run at least.

Transfer of Disembodied Technology

Transfer of technology should involve, as UNCTAD postulates, "the transfer of systematic knowledge for the manufacture of a product, for the application of a process or for the rendering of a service and does not extend to the transactions involving the mere sale or mere lease of goods."{83:p.2} We refer to such technology transfer as the transfer of disembodied technology or of production method. The means for this range from the establishment of a wholly-owned subsidiary in the host-country to patent / license arrangements, joint-ventures, turn-key arrangements, to profit-sharing arrangements.

Disembodied technology usually introduces new commodities / productive knowledge which had no counterpart before in developing countries. In other words, the transfer of disembodied technology has two aspects; (1) introduction of new production process; and (2) introduction of new commodities. The basic assumption made in this context is that the transferred technology has no counterpart prior to transfer transaction.

The process of the transfer is not a simple, straight forward process, but has some important stages as follows:

- (1) Feasibility studies and market surveys prior to investment;
- (2) Assessment and classification of the most appropriate techniques;
- (3) Engineering design of new production facilities;
- (4) Plant construction and installment of machinery (in case of new establishment);
- (5) Management and operation of the plant;
- (6) Marketing; and
- (7) Organizational and technical adjustments in post-investment period.

All these stages are important steps for the evaluation and selection of appropriate production methods. If all steps are thoroughly studied and carefully implemented, the transferred technology (disembodied technology) is most likely to make various positive contributions to the host-country

economy, for example on employment generation, foreign currency earnings, etc. If not, costs might outweigh the benefits considerably. One should note, however, items (1) to (4) would be irrelevant in case of technology transfer by acquisition of existing plant by MNE.

Economic policies of the technology receiving countries influence significantly the types and objectives of foreign investment. Under import-biased growth strategies, various protective measures comprise some of the imperfections generated by the system. Under export-biased growth strategy, probably the major imperfection would be what UNCTAD describes as the "Non-transfer" of technology. "There is a "non-transfer" of technology when a plant is situated in a country because of that country's particular resource endowment, but the elements of knowledge connected with its operation are not transferred to the nationals of the country concerned."{66:} As an example, assume that the foreign investor exercises complete control over production, distribution, flow of information and other key issues. And the essential components of the output are assumed to be imported. The major contribution of the foreign investor in this case would be the creation of new jobs, some foreign currency earnings, and perhaps taxes collected. One could hardly talk of any technology transfer.

Transfer of disembodied technology is usually accompanied by the transfer of "Complementary Knowledge" in the form of technical and managerial assistance to the recipient country. Occasionally, the complementary knowledge is required by the recipient country due to lack of technical and managerial skills. But often, the flow of complementary knowledge between the parent firm and the subsidiary is secured by various implicit and explicit contractual arrangements. The bargaining power of the related parties and the nature of FDI (whether majority- or minority owned subsidiary) affects the essence and extent of the flow of complementary knowledge.

In the following chapter, we will analyze the impacts on the economy of host developing countries resulting from the transfer of disembodied technology through the foreign market operations of MNEs, e.g. subsidiaries.

CHAPTER-III IMPACTS OF FDI_s ON THE NATIONAL ECONOMY

III-1: THE NEED FOR IMPORTED TECHNOLOGY

In the process of development struggle, the developing countries encounter various problems. Some of these common problems are 1) the scarcity of skilled man-power, 2) lack of capital, 3) short-age of foreign exchange to import the necessary machinery and equipment, 4) under-utilization of labor-force (un-/under-employment), and 5) inadequate infrastructure. The urgency and severeness of the problems varies from country to country, reflecting the prevailing specific conditions.

In the field of technology, the problems facing the developing countries are not of lesser importance. On the contrary, technology related problems rank among the most urgent problems. It is a commonly accepted fact that the technology originating from the developing countries is, primarily, inferior, outmoded, and labor-intensive, reflecting the lack of skilled man-power and resources as well as the inferior technological infrastructure of that country. The industrial commodities produced with these technologies often lack the quality, standard and the precision required in the international markets.

The technological, organizational and other related problems of under-development can be counter-acted by four major means;

- 1- By promoting and encouraging the development of indigenous technologies through various measures and incentives, in accordance with the available human and physical resources.
- 2- By developing the "appropriate" technologies at the non-profit institutions, promoted by international organizations then spilled over to developing countries at marginal costs, or at a symbolic price.

- 3- By transferring advanced technology through patent / license arrangements.
- 4- By transferring the technology through the foreign direct investments of MNEs.

Development of indigenous technologies to higher levels than those prevailing in developing countries is a rather costly and time-consuming and complex process. Tying the scarce resources to the development of something that already exists (e.g. more advanced technology) may seem to many as an irrational attitude, misallocation of scarce resources. The common analogy in relation to the matter in question is "Why discover America again?" Moreover, while scarce resources are tied up in a costly process outcome of which is uncertain, the industrialized countries may further widen the technological gap by introducing new and more advanced technologies. In short, there would be rather high degree of risk and uncertainty involved if the developing country scarce resources were to be devoted to indigenous technology development. One should note, however, that success is not a utopia. Japan, for example, is a late-comer of industrial development, and her success is largely the outcome of consistent economic policies encouraging indigenous resources to imitate and further develop the imported advanced technology through mainly patent and license arrangements. Country-specific conditions and the potential capabilities, both human and physical, of each country play a decisive role in the outcome of efforts.

It might seem as an ideal solution for the developing countries, especially for the least developed ones that non-profit institutions such as the United Nations engage in the production of "appropriate" technologies and then transfer it at reasonably low costs to interested parties. Such technology transactions should be free from the restrictive clauses, thus less costly in the longer run. The results of such a process, however, are bound to be dubious, with respect to the different levels of development among developing countries. What is "appropriate" for one country might prove to be quite "inappropriate" in another, thus creating conflicts of interest. Nevertheless, production and distribution of some form of technology by non-profit institutions for the benefit of developing countries does not seem to be totally irrational or utopian. Since no imported technology is expected to fit like a tailor-made shirt, the technology receiving country may import the basic knowledge necessary for the production and adapt it to her indigenous endowments, with the assistance of, if necessary, the foreign technicians. This process could save the costs of self-production and the costs involved with

restrictive practices of MNEs (see also Ch.III-4). An important relevant aspect in this process is the transfer of "complementary" knowledge, i.e., the knowledge required for the successful adaptation and implementation of imported technology.

Patent-right or license arrangements, as the means of technology transfer, provide the importing country with access to a "given" level of technology, subject to the clauses imposed by the seller. The contents of clauses (e.g. bargaining power of parties) determine the extent of costs and benefits accruing to the parties involved. If, for example, forward and backward linkages are restricted, say through grant-back clauses, the technology importing country's gain would be limited. Since the patent / license arrangements provide access to a certain level of knowledge, the imported technology is bound to be outmoded after some time, thus forcing the importer to resort to technology owner for a new arrangement, not to lag too far behind the up-to-date relevant technology.

The problem of underdevelopment is not only a technological problem, but it also reveals itself in terms of under-utilization of labor-force, lack of capital, scarcity of foreign exchange, etc. Private direct investments can (does) make valuable contributions to the relief of these problems in developing countries. Foreign direct investment by enterprises implies introduction of new commodities (product-diversification) and new production methods (disembodied technology) in the host-country. As a result of investment, the domestic productive capacity and, most likely, the productivity increase along with the employment opportunities. The greater the total output, the greater would be the national income and income per capita. Since the foreign investors usually pay higher wages than the average, the income of the workers improve. Transfer of technical, organizational and managerial skills is another important contribution to the national economy of host country arising from the foreign direct investment. In addition, foreign investment saves, *ceteris paribus*, foreign currency by producing commodities that were previously being imported, and may even earn foreign currency through exports. In the absence of tax-holidays, foreign investor contributes to the revenue of state and municipalities as tax-payers. In view of all these "potential" advantages to be gained, ignoring the costs involved for the sake of argument, foreign direct investments by private enterprises in developing countries seem to be a valuable and indispensable source of economic growth. In other words, the need for, and the potential contribution of, foreign investment in developing countries is an indisputable fact.

III-2: MAJOR CONTRIBUTIONS OF FOREIGN DIRECT INVESTMENT

The critical question arising in conjunction with the establishment of a manufacturing subsidiary is whether FDI does make any contribution to the economy of host country. Expected contributions of FDI involve more than mere transfer of financial assets, ranging from the transfer of complementary knowledge, addition to domestic capital stock and employment, to foreign exchange earnings, lower prices for commodities, higher disposable income, taxes paid and greater real output. But, can the foreign operations of MNEs contribute on these important issues to the development process of developing countries? If so, what determines the nature and extent of contributions?

For the sake of argument, if we disregard the political aspects of FDI, the main question would be how to test the magnitude of contributions. If foreign entry is realized through acquisition of an existing plant, its contributions would be rather different in comparison to a newly established plant. In the former case, the total output and productivity as well as employment might increase due to spill-over effects of investment with respect to situation prior to FDI. But entry through establishment of a new plant would, most likely, make more positive contributions.

Especially in the initial phase of foreign investment, expected benefits are assumed to be greater than the costs because it takes some time before the investment generates positive returns. The foreign investor would be inclined to accept lower profit rate, and probably reinvest the initial profits in the host country to improve, or to add, to the capital stock.

Regarding the entry of MNE subsidiary through acquisition of an existing plant, the key relevant question to be asked would be; what would have happened in the absence of foreign investment? If the demand on local resources is greater, the allocation of resources more efficient and the real output greater than before the acquisition, and then the subsidiary is definitely making positive contribution. If the subsidiary produces some technical and

managerial /organizational backward/ forward linkage effects on the rest of the economy, the contribution would be greater. But it is rather difficult, if not impossible, to measure the magnitude of such contributions.

Probably, the most valuable contributions made by foreign operations of MNEs are the flow of productive knowledge (technology) and management skills. Such contributions might not occur when the subsidiary is established merely to take advantage of the cheap labor / financial incentives and to serve the markets other than the host country. In addition, the ownership structure of the subsidiary also plays a significant role in the flow of knowledge from the parent firm. Theoretically, the flow of all kind of knowledge to the subsidiary would be unlimited if the subsidiary is wholly-owned by MNE.

In cases of majority/minority ownership, Joint-ventures, and license-agreements, access to foreign productive and managerial knowledge would be restrained. In practice, however, each case might produce different results on the national economy of host country depending on the national economic policy and objectives. From the MNE point of view, the generally preferred form of economic activity is through 100 percent ownership of the manufacturing subsidiary for the simple reason of control of production and distribution as well as to maintain a given level of technical standard of commodities, or to protect the company image, brand-name, trade-mark. But, what form of arrangement, in terms of ownership / control would be preferable from the point of view of host-countries?

Capital Formation and Productivity

Capital Formation

The importance of capital formation e.g. increased productive capacity, in the process of development can hardly be overrated. Regarding the scarcity of capital and the low propensity to save in developing countries along with the inefficiency of compulsory saving policies (for example taxation), one of the major contributions of foreign investment seems to be the addition to domestic capital stock (increased productive capacity) both at industrial and national level. If foreign investment is accompanied with an "appropriate" package deal, the host country is assumed to benefit significantly from the so called forward/ backward spillover effects of the imported technology and skills.

Shortage of capital and the low propensity to save are two of the major impediments of capital formation. According to Rostow, it is necessary, though not sufficient, that the proportion of net investment in national income should rise to over 10 percent for a country's "take-off". {48:p.82} But for some historical and current economic reasons, the average rate of domestic savings tends to be below the desired proportion of national income in developing areas. The vicious circle of capital shortage and low saving propensity can be broken by three ways. First of all by encouraging domestic "voluntary" savings, which implies the sacrifice of present consumption in favor of the future increased consumption. Unless the incentives to save are sufficiently attractive, expecting self-introduced voluntary cuts in the current consumption of low-income masses would appear unrealistic. Such measures, however, could increase the saving propensity of the higher income-groups. In addition to economic incentives, traditions and social values may also influence the saving propensity in developing countries.

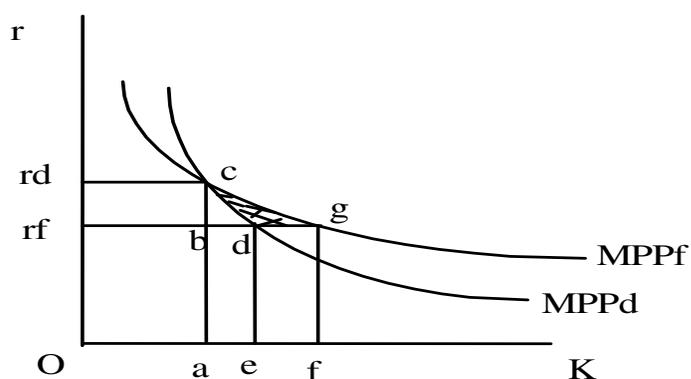
An alternative to increased domestic savings through self-imposed voluntary savings is the government imposed "involuntary" saving measures such as increased taxation or compulsory lending to the state through the purchase of state bonds. Such government imposed compulsory methods may render efficient results during a war period or under totalitarian regimes. But in countries where free elections are held and market forces are the dominant economic factors, such austerity measures are likely to meet strong resistance. The elected ruling party in power would be reluctant to introduce such measures fearing that it could cost the party the next mandate period in office.

As an alternative to domestic sources of capital formation, the foreign investment could be encouraged to step in to fill the gap between the actual rate and targeted rate of savings (investments). Thus, neither unpopular austerity measures nor the self-imposed sacrifice of current consumption would be necessary to realize national objectives. In fact, undiminished current consumption may even lead to greater future output and investments, consequently greater capital formation.

Figure III-1 shows a hypothetical case of foreign investment and its contribution to domestic capital formation. Assume that MPP and MPP' represent the marginal physical product curves before and after the foreign investment, respectively. Let K denote the domestic capital stock, r the rate of profit. Foreign investment is assumed to be more capital intensive than

domestic production. Before foreign investment takes place, the stock of capital is $O-a$ and the rate of profit r^d . After foreign investment, the domestic capital stock increases to $O-f$, while r falls to r^f regarding the greater MPP of foreign capital. Total domestic capital stock increases by the amount of $a-f$. If the capital addition was generated by domestic sources instead of foreign investment, the capital stock would increase by the amount of $a-e$ at the rate of profit r , while $e-f$ would represent the amount of capital foregone. Shaded area $c-d-g$ represents the net gain to the host country.

Figure III-1 Hypothetical Addition to Domestic Capital Formation
After Foreign Investment.



The inflow of foreign capital is expected to make an important contribution to the domestic capital formation in developing areas. In Turkey, the value-added by the subsidiaries of foreign enterprises represented an average of 4 percent of the nominal GNP between 1973 and 1977, and 21.8 percent of the value-added in the manufacturing sector. {20:p.266, Table:A-16} Since 1973, the number of developing countries benefiting considerably from foreign investments has been limited to a few countries only, according to IMF (1985) "as many countries turned to overseas borrowing as a source of foreign savings.

Between 1979 and 1981, direct investment inflows represented about 25 percent and 11 percent of total fixed capital formation in Singapore and Malaysia, respectively; around 5 percent in Chile and the Philippines; only about 1.5 percent in Brazil, Indonesia, and Mexico; while they were negligible in India, Korea, and Nigeria. However, these measures understate the contribution of foreign-owned enterprises to gross capital formation.

Reinvested earnings are not recorded for some developing countries; in addition, the depreciation funds of direct investment enterprises, which are not included in the definition of direct investment, finance a substantial proportion of their gross capital expenditures." {32:p.9}

There will be an addition to the domestic capital stock of host country only if the foreign investor enters the market by establishing a new unit of production-center. If the entrance into the market is realized through the acquisition of an already operating plant, there will be no such contribution to the economy. MNEs are often criticized for entering the market through acquisition, thus accused of failing to meet the expectations. Table III-1 shows data on the manufacturing subsidiaries of 391 MNEs as of 1975 and 1970 for the U.S. and other developed country MNEs, respectively. Data indicates that the MNEs demonstrated a clear preference for entry through the acquisitions in the developed areas, 54 percent of the total, while 33 percent of the subsidiaries were declared as newly formed. The same data displayed the reversed trend in the developing areas. Newly formed manufacturing subsidiaries made up about 58 percent of the total, and around 31 percent entered the market through acquisitions of already operating plants. Japanese based enterprises made their entry mainly through the newly formed production units both in developed and developing areas, 82.6 and 83.9 percent, respectively. MNEs seem to prefer to enter the market by setting up a new plant when the prospective host country has no counterpart of the planned manufacturing unit.

Table III-2 demonstrates the percentage distribution of foreign manufacturing subsidiaries of selected countries, classified by whether newly formed or acquired. Percentages of Italian and French MNEs entering markets by newly formed subsidiaries were 71 percent and 51 percent, respectively, of the total. Other countries' entry by newly formed subsidiaries was around 40 percent on average. But in Latin America, except for Belgium and Luxembourg based enterprises, more than 60 percent of subsidiaries were newly formed, i.e., new addition to the capital stock. Italian newly formed manufacturing subsidiaries represented 82 percent of the total, followed by the Netherlands, 74 percent.

One should keep in mind that the MNEs often enjoy a comparative advantage in the field of their activity, into which entry is comparatively not easy. This comparative advantage could be technological as well as financial, organizational, managerial or a combination of two or more of these factors simultaneously. Technological comparative advantage might prove it

necessary to set up a new production center, while other comparative advantages might easily be exercised through the acquisition of an existing plant. Therefore, entry through new establishment has been more common in developing countries in comparison to developed countries with advanced technology.

Table III-1 Foreign Manufacturing Subsidiaries Of 391 MNEs, Classified By Whether Newly Formed Or Acquired As Going Concerns. *

| Location and Classification | Subsidiaries of 180 U.S. enterp | | Subsidiaries of 135 Europe & U.K. - based enterp | | Subsidiaries of 61 Japan -based enterp | | Subsidiaries of all 391 enterprises in sample ** | |
|-----------------------------|---------------------------------|------------|--|-----------|--|------|--|------|
| | Number | % | Number | % | Number | % | Number | % |
| IN INDUSTRIALIZED | ED | COU | NTRI | ES | | | | |
| Total Subsidiaries | 3,603 | 100 | 3,207 | 100 | 46.00 | 100 | 6,856 | 100 |
| Acquired as going concerns | 1,974 | 54.8 | 1,705 | 53.1 | 8.00 | 17.4 | 3,687 | 53.8 |
| Newly formed | 1,385 | 38.4 | 862 | 26.9 | 38.00 | 82.6 | 2,285 | 33.3 |
| Other & unknown | 244 | 6.80 | 640 | 20.0 | 0.00 | 0.00 | 884 | 12.9 |
| | | | | | | | | |
| IN DEVELOPING | COU | NTR | IES | | | | | |
| Total Subsidiaries | 2,124 | 100 | 1,454 | 100 | 516 | 100 | 4,094 | 100 |
| Acquired as going concerns | 757 | 35.6 | 465 | 32.0 | 72 | 14.0 | 1,294 | 31.6 |
| Newly formed | 1,224 | 57.6 | 715 | 49.2 | 433 | 83.9 | 2,372 | 57.9 |
| Other & unknown | 143 | 6.70 | 274 | 18.8 | 11.00 | 2.10 | 428 | 10.5 |

Source: Harvard Multinational Enterprise Project. {86:p.72, Table:7}

* : Data for U.S.-based enterprises are provisional, as of 1975; others are final, as of 1970.

** : Includes 15 Multinational Enterprises based elsewhere than in the U.S., Europe, and United Kingdom, or Japan.

Table III-2 Percentage Of Foreign Manufacturing Subsidiaries Formed Or Acquired By Large American And Continental European Enterprises (U.S. data from 1900 through Jan.1,1968,all other through Jan.1,1971)

| National base of parent enterprise | Newly Formed | Method of | | Establishment Through Acquisition of Another Parent or Reorganization | Total % | Total Number Established |
|------------------------------------|---------------|-------------------|-------------|---|---------|--------------------------|
| | | Acquired Directly | | | | |
| Subsidiaries United States | In All 49 % | Areas - | of the 51 % | World: - | 10 | 4,512 |
| France | 51.00 | 21.00 | | 28.00 | 10 | 297.00 |
| Germany | 40.00 | 26.00 | | 34.00 | 10 | 937.00 |
| Italy | 72.00 | 21.00 | | 7.00 | 10 | 102.00 |
| Bel. & Lux. | 40.00 | 32.00 | | 28.00 | 10 | 255.00 |
| Netherlands | 40.00 | 24.00 | | 36.00 | 10 | 413.00 |
| Sweden | 39.00 | 46.00 | | 15.00 | 10 | 195.00 |
| Switzerland | 39.00 | 37.00 | | 24.00 | 10 | 411.00 |
| Subsidiaries United States | in Latin 57 % | Ameri - | Ca 43 % * | - | 10 | 1,178 |
| France | 51.00 | 11.00 | | 38.00 | 10 | 53.00 |
| Germany | 61.00 | 25.00 | | 14.00 | 10 | 126.00 |
| Italy | 82.00 | 18.00 | | 0.00 | 10 | 39.00 |
| Bel. & Lux. | 20.00 | 80.00 | | 0.00 | 10 | 10.00 |

| | | | | | |
|-------------|-------|-------|-------|----|-------|
| Netherlands | 74.00 | 6.00 | 20.00 | 10 | 34.00 |
| | | | | 0 | |
| Sweden | 57.00 | 35.00 | 8.00 | 10 | 23.00 |
| | | | | 0 | |
| Switzerland | 67.00 | 17.00 | 16.00 | 10 | 36.00 |
| | | | | 0 | |

Source: Comparative Multinational Enterprise Project.
{24:p.119,Table:5.4}

* : Direct and Indirect Acquisitions.

Productivity

One of the principal objectives of development plans in relation to domestic output is the increased productivity per man hour /employee. Decision-makers and planners in developing countries often attempt to allocate the scarce domestic resources to investment projects yielding the highest output per employee. However, factors such as low degree of mechanization and lack of skilled man-power often constrain the realization of desired overall labor productivity levels. Productivity level depends mainly on the technology applied, human skills and organizational/ managerial efficiency.

MNEs are most frequently found in the technology-intensive dynamic sectors and employ capital-intensive methods of production which maximizes output per employee. Accordingly, a foreign owned subsidiary is most likely to have greater productivity per capita than the indigenous firms in the same industry, and fulfill the expectations of planners in this regard. In other words, foreign investment can make significant contributions to increase local productivity in developing countries by transferring advanced production methods and complementary productive knowledge.

In a case study of labor and capital productivity in Peru, Vaitzos found that the subsidiaries were run more efficiently. Reflecting on Vaitzos' estimates, S. Lall (1980) warns the reader that "since he does not distinguish between different industries, his general findings, that foreign firms seem to be more efficient than local ones, particularly in their use of labor, need to be carefully interpreted." {41:p.45} Studying productivity, as defined value-added over employment and capital, Fajnzylber found in Mexico that "foreign firms have higher labor productivity overall than local firms (2.0 times), with the difference being greatest in light consumer goods (2.5) and least in consumer durable (1.4). Somewhat surprisingly, he finds that the capital productivity of foreign firms is uniformly lower, being 0.8 of that of local firms on average..... On Argentina, Sourrouille (1976) provides information on labor productivity of foreign and local enterprises (measured by output per employee) by industry groups. For 1967, foreign firms' productivity was 2.1 times that of local firms on average." {41:p.45}

Reflecting on Jo's findings in South Korea, Lall states that "on average foreign firms have labor productivity 1.8 times that of local firms, lower than local firms in sectors like clay, metal products, food, wood, and electrical machinery, and higher in textiles, chemicals, machinery, and transport

equipment." {41:p.46} Studying relative productivities in Turkish manufacturing sector, Erdilek (1979) found that the average productivity of a Turkish worker in a foreign subsidiary was 72 percent of the average productivity of its parent firm where the same or similar products were produced. {20:p.141} According to Erdilek's estimates; "The mean average relative labor productivity was the highest, 100 percent, in food and beverages and the lowest, 61 percent, in transportation vehicles and tractors." {20:pp.140-141}

Employment

One of the most serious and urgent problems of developing countries is the employment problem, e.g. under-utilization of labor-force. After decades of development efforts and economic growth, a large portion of the labor-force in developing countries still remains un-/under-employed. Employment problem has both demoralizing and destabilizing effects on the individuals and socioeconomic stability. Major causes of the employment problem seem to be; 1) high growth rate of the population, and 2) generation of inadequate employment opportunities. It has been claimed that policies to reduce the growth rate of population and to encourage more labor-intensive production methods could relief the problem considerably. An alternative effective measure to deal with the employment problem is the acceleration of the rate of economic growth, thus generation of new employment opportunities.

Regarding the scarcity of domestic resources in developing countries, there seems to be an upper limit to the rate of growth of employment opportunities. Empirical studies indicate that "the annual rates of growth in total non-agricultural employment during the period 1955-64 were actually negative in a number of African countries: -0.5 percent in Kenya; -0.7 percent in Malawi; -0.4 percent in Tanzania; -0.1 percent in Uganda; and -0.9 percent in Zambia." {48:p.171} According to the estimates of ILO, developing country labor-force is projected to increase by 400 million between 1970 and 1985. {48:p.178}

Under-utilization of the labor-force is, and apparently will continue to be, a serious dilemma difficult to cope with in the short-run. Given the favorable climate, the foreign subsidiary could contribute to relief the pressure in developing areas by generating new employment opportunities. Although "MNEs seem to have preference for entering into or expanding in the

developed host nations via mergers or take-overs of established firms" as Parry observes, "with regard to the developing host nations, the principal form of entry by direct investors appears to have been new grass-roots entry." {55:p.129} This implies not only addition to domestic capital stock but also generation of new jobs. But, according to Bergsten-Horst-Moran (1978), "multinationals provide no more than about half of 1 percent of all jobs in the developing world." {10:p.356} an insignificant (incremental) contribution.

Switzerland-based MNEs are quite probably the most internationally oriented enterprises in terms of the extent of foreign operations per capita. A study of 35 largest Swiss manufacturing firms grouped by sales in 1974 showed that; "While the top five employ five-sixths of their workers abroad, the firms in the seventh group employ only one-tenth abroad." {1-a:p.6} (see Table:III-3) On average foreign employment generated by 35 largest Swiss firms was twice as large as home country employment, 68.2 percent and 31.8 percent, respectively.

Table:III-3 Employment in 35 Largest Manufacturing Firms,
1974

| | Total No. | Domestic | | Foreign | |
|------------|-----------|----------|---------|---------|---------|
| | | No. | Percent | No. | Percent |
| Largest 5 | 386,111 | 64,756 | 16.80 | 321,355 | 83.20 |
| Second 5 | 128,155 | 61,005 | 47.60 | 67,150 | 52.40 |
| Third 5 | 69,449 | 31,888 | 45.60 | 45.60 | 54.40 |
| Fourth 5 | 37,961 | 21,320 | 56.20 | 16,641 | 43.80 |
| Fifth 5 | 23,654 | 12,200 | 51.80 | 11,454 | 48.20 |
| Sixth 5 | 14,498 | 9,859 | 68.00 | 4,369 | 32.00 |
| Seventh 5 | 14,822 | 13,282 | 89.20 | 1,600 | 10.80 |
| Largest 35 | 674,710 | 214,310 | 31.80 | 460,400 | 68.20 |

Source: Union Bank of Switzerland, Die groessten Unternehmungen der Schweiz im Jahre 1974. {1-a:p.6,Table:I-4}

Foreign Currency Flow (Investment & Exports)

Investment:

Facing frequently foreign currency shortages, many developing countries often resort to external borrowing to finance the flow of necessary import components of production such as machinery, raw materials, equipment, reserve parts, etc. in order to sustain the economic growth. Scarcity of foreign currency is a serious constraint on the ambition level of development plans and the rate of economic growth. Foreign currency shortage implies imbalance in balance-of-payment position of a country, thus making the foreign creditors reluctant to lend because of the risks involved. When a loan is granted to a needy country after all, the creditor would quite likely impose various restrictions on the use of loan, hence reducing the flexibility of the borrowing nation.

Table: III-4 Non-oil Developing Countries: Selected Financial Flows Through International Capital Markets. 1974-83

(In billions of U.S. dollars)

| | Average annual flows | | | | Cumulative flows |
|--|----------------------|-------------|-------------|-------------|------------------|
| | 1974.0 0 | 1975- 78 | 1979- 81 | 1982- 83 | 1974-83 |
| Net borrowing from banks | 15.00 | 19.00 | 33.00 | 21.00 | 216.00 |
| Net long-term borrowing from official creditors | 7 | 12 | 20 | 24 | 165 |
| Net inflow of direct investment | 5.00 | 6.00 | 10.00 | 11.00 | 82.00 |
| Current account balance of non-oil developing countries* | -37 | -38 | -87 | -69 | -588 |

Source: IMF (1985) {32:p.19,Table:3}

* : Negative numbers imply deficits

Inflow of foreign investment could make positive contribution to the foreign currency shortage in developing countries, at least in the short-run. As Table:III-4 shows, the major source of foreign exchange in developing areas

was the flow of financial loans between 1974-1983, \$ 381 billion, while the net inflow of foreign investment consisted only 21 percent of loans, \$ 82 billion. "Direct investment flows include all funds provided by the direct investor, either directly or through an affiliate. Reinvested earnings generally constitute a large proportion of these flows. During 1975-82 they accounted for some 60 percent of all direct investment from the United States to developing countries, for over half of all the direct investment flows from the United Kingdom, but for 11 percent of total recorded German direct investment, reflecting that country's smaller initial stock of such investment. Many of the host developing countries do not collect information on reinvested earnings, but for a group of 12 non-oil developing countries for which data covering a sufficiently long time period are available, reinvested earnings represented an average of some 39 percent of recorded direct investment during 1973-82." {32:p.6}

Table: III-5 Net Flow of Financial Resources from Industrial Countries to Developing Countries, 1960-82
(In billions of U.S. dollars)

| | Average | | | | | | | | | | |
|---------|------------|------------|------|------|------|------|------|------|------|------|------|
| | 1960-1966* | 1967-1973* | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 |
| Direct | | | | | | | | | | | |
| Inv. | 1.8 | 1.3 | 1.1 | 10.5 | 7.9 | 9.4 | 10.8 | 12.4 | 10.5 | 15.7 | 9.90 |
| Total | | | | | | | | | | | |
| Flows** | 9.2 | 17.9 | 22.0 | 40.1 | 46.6 | 52.0 | 71.2 | 75.8 | 75.6 | 89.7 | 83.7 |

Source: OECD, Development Assistance, 1961-71; and Development Co-operation, 1972-83. {32:p.41,Table:A-1}

* : Figures prior to 1972 exclude flows from New Zealand and Finland.

** : Includes official Development Assistance, other official flows, Export Credits, Grants, and other private flows.

Net flows of foreign direct investment from developed to developing countries increased considerably, from an average of \$ 1.8 billion between 1960-66 to around \$ 10 billion a year between 1975 and 1982. (See Table:III-5) Countries with limited domestic markets and natural resources, and inadequate infrastructure acquired a smaller portion of the total. But the overall impact of foreign investments on the balance-of-payments account

seems to be significant, *cet. par.* In general, the balance-of-payment account of the host country improves with foreign investment, as it takes some time to materialize and transfer profits to the home country. In other words, the impact of foreign investment is usually positive in the short-run.

Assume an initial case where foreign investment is import-substituting. "Net foreign exchange benefits" (NFEB) of the host country would equal the amount of foreign investment (I) and plus the net savings of import-substitution (IS), minus royalty payments (R), remitted profits (RP), and other related transfers (OT) such as transfer-pricing, salaries of foreign personnel, etc.;

$$\text{NFEB} = (I + \text{IS}) - (R + \text{RP} + \text{OT})$$

If the foreign subsidiary exports at least some of its output, the net benefit would include the export earnings (X) too;

$$\text{NFEB} = (I + \text{IS} + X) - (R + \text{RP} + \text{OT})$$

If the subsidiary is established merely to service home country or a third country (or both) markets, the net foreign exchange benefit would equal;

$$\text{NFEB} = (I + X) - (R + \text{RP} + \text{OT})$$

In the first and second cases, the net foreign exchange earnings would probably be negative after a time-span, say 5-10 years, with respect to the empirical evidence on the outflow of foreign currency from subsidiaries. In the short-term, however, especially in the initial phase of investment, the benefits are expected to be higher.

Exports:

Exports have been the engine of growth for many countries in the past, and continue to play a vital role in the development process of developing countries. Unfortunately, some developing country economies still rely heavily on one or a few export products to earn foreign currency. For majority of the developing countries, agricultural or primary products constitute the lion share of exports. Since the demand is inelastic and/or the synthetic substitutes are increasing in the production sectors, the future prospects do

not seem very promising for those countries. In fact, such economies are bound to be highly vulnerable and sensitive to external events. For a sustained economic growth, with due regard to other aspects of development, it is imperative to increase and diversify the developing country exports. The main imports of industrialized countries from the developing areas with the exception of a few countries like Singapore and South Korea, consists of agricultural or natural products. The largest portion of the world trade, and the import of industrialized countries, on the other hand, consists of manufactured or semi-manufactured commodities. The share of the developing countries in the total world trade of (semi-) manufactured commodities was under 6 percent in 1971. {48:p.764} In 1970s, this share of the developing countries indicated some improvement, but meanwhile the protectionist voices from the industrialized countries also increased. Paradoxically, while DCs were dedicatedly praising the merits of free trade policies to developing countries, protective measures were growing for the labor-intensive sector imports such as textiles, where the developing countries enterprises are most competitive.

MNEs with their tremendous facilities in the fields of finance, marketing, technological know-how and distribution may play an important role in the growth of exports of manufactured and semi-manufactured commodities from developing countries. Given the "right" policies and incentives, the subsidiaries in developing countries could easily provide a basis for the earning of foreign currency and stimulate the global trade. The higher the output and foreign exchange earnings of subsidiaries, the greater would be the probability of breaking the vicious circle of under-development. According to data on Table III-6, around 95 percent of European and Japanese manufacturing subsidiaries in LDCs were producing mainly for the local market, and only a small percentage were exporting by the end of 1970. This initial small percentage of exports from subsidiaries also implies that exports from LDC-subsidiaries can be increased substantially.

"Although intrafirm trade is generally less important for developing than for industrial countries, it plays a major role in certain developing countries, particularly those with substantial exports from technology-intensive industries. In recent years, trade between related parties (parties of which one owns 5 percent or more of the voting stock of the other) accounted for only around one quarter of manufactured imports into the United States from all developing countries, compared with over one half of such imports from industrial countries. However, related-party trade accounted for around three quarters of manufacturing exports to the United States from Malaysia,

Mexico, and Singapore, over one third of such exports from Brazil, but less than one tenth of those from Argentina and India." {32:p.12}

The success of foreign currency earnings from exports depends largely on the trade policy of the host country and the global opportunities. In Singapore and South Korea, where export-biased trade policies have been prioritized, the foreign manufacturing plants were "responsible for some 90 percent and 27 percent, respectively, of total of manufactured exports in the late 1970s." {32:p.12} Whereas in Turkey, where import-biased trade policies shaped the growth of economy until 1980, export earnings of foreign manufacturing firms was rather limited, only 8.5 percent of direct import costs in 1975, and 9.4 percent in 1976. {84:214} One ought to be very cautious, however, in assessing the foreign exchange benefits of foreign-owned subsidiaries to the economy of host country "since exports frequently have a substantial import content, and the domestic spread effects are often limited where such operations are carried in enclaves, for instance free zone processing areas." {70:p.12}

Table: III-6 Foreign Manufacturing Subsidiaries of MNEs of Europe and Japan, Classified by Principal Market, Jan. 1, 1971

| National base of parent enterprise | y's | | Market: | | |
|------------------------------------|--------------|------------------------|--------------|----------|-------------|
| | Subsidiar | Principal | Export | Markets: | |
| | Local market | Developed-country subs | Subs in LDCs | Total | Total known |
| U.K. | 94 % | 5 % | 1 % | 6 % | 1,962 |
| Japan | 79.00 | 0.00 | 21.00 | 21.00 | 435.00 |
| Germany | 96.00 | 3.00 | 0.50 | 4.00 | 645.00 |
| France | 87.00 | 6.00 | 7.00 | 13.00 | 153.00 |
| Italy | 97.00 | 0.00 | 3.00 | 3.00 | 65.00 |
| Bel & Lux | 93.00 | 7.00 | 0.00 | 7.00 | 132.00 |
| Netherlands | 95.00 | 2.00 | 3.00 | 5.00 | 326.00 |
| Sweden | 95.00 | 5.00 | 0.00 | 5.00 | 114.00 |
| Switzerland | 92.00 | 6.00 | 1.00 | 8.00 | 229.00 |

Source: Comparative Multinational Enterprise Project.
Percentages derived from {24:p.126, Table 5.8}

Technology, Management, Marketing and Organization

The foreign investor brings to the host country not only foreign exchange but also new product(s) and production method(s), a certain structure of industrial organization, and management skills. In the absence of foreign investment, the developing country would either have to allocate some of the scarce resources to the purchase of advanced technology from industrialized areas, or engage the limited indigenous resources in the costly and risky process of technology production.

Foreign investment facilitates the developing country to have access to advanced technology without suffering the heavy costs and risks of production. Due to their tremendous technological facilities and the accumulated know-how, the MNEs are even in a position to design products or to develop production methods especially adjusted to the needs of host country. "Relevant examples are refrigerators, air-conditioners, elevators, coal-mining equipment, transport equipment and agricultural machinery suited to tropical conditions." {70:p.8} Moreover, through learning-by-doing and training of local personnel, the host country could enrich her productive knowledge and increase the number of technical staff exposed to advanced technology, and eventually spread over the acquired knowledge and skills to other industries (sectors).

One of the significant contributions of foreign investment on the host country economy is the access to efficient managerial skills and advanced organizational structure. Through learning-by-doing process, the recipient country could improve considerably the indigenous managerial skills and the organizational ability of local personnel. And eventually, through spill-over effects, even other sectors may benefit from the imported advanced marketing and organizational skills.

Wages, Prices and Taxes

Wage-Rate:

As the imported foreign capital adds to domestic capital stock of host country, the marginal efficiency of capital is assumed to decrease, while the real wage-rate rises, in theory at least. According to Lewis, however, as long as there is

a reservoir of surplus man-power to be drained off in the rural sector, the real wage-rate is expected to remain at low levels, if not at subsistence level, until all surplus man-power is absorbed in non-rural employment activities. Worldwide empirical evidence tend to dismiss Lewis' theory {48:} Due to various factors, an industrial employee seem to get a much higher real wage than just enough to attract rural inhabitants to urban sector, as Lewis assumes. And foreign investors usually tend to pay higher average wages than the average wages paid by local competitors or wages paid in other industries, irrespective of the size of reserve labor-army.

Table: III-7 demonstrates that the average annual wages paid by foreign subsidiaries was 1.9 times higher than the average annual wages paid in Turkish manufacturing sector in 1980. The ratio dropped to 1.7 in 1981 and to 1.6 in 1982. This result was caused by the higher growth rate of wages in the manufacturing sector by Turkish enterprises. But, nevertheless, the difference was still significant, around 65 percent higher for foreign subsidiary employees. Comparing the average hourly wage-rate paid to Turkish industrial workers employed by the subsidiary to the corresponding wage-rate paid by parent firm at home, Erdilek (1982) found that the average wage-rate of Turkish worker was only 56 percent.

Table: III-7 Average Annual Wages per Employee in the Foreign Capital Firms and in the Manufacturing Sector.
(Current Prices)

| Years | (1) | | (2) | | (1)/(2) |
|-------|--------------------------------|------------|----------------------------------|------------|---------|
| | Annual Average Wages in F.C.F. | Change (%) | Average Annual Wages in Man.Ind. | Change (%) | |
| 1980 | 596,800 | - | 308,860 | - | 1.90 |
| 1981 | 797,100 | 33.50 | 451,900 | 46.30 | 1.70 |
| 1982 | 951,500 | 19.40 | 575,200 | 27.30 | 1.60 |

Source: U. Bozkurt (1986), YASED, p.22, Table: 19

Prices:

Advance technology produced by the MNEs is generally capital-intensive and designed for large-scale production in relatively high income markets. As such, advance technology appears to be inappropriate for the developing countries, especially in smaller nations with very limited domestic markets and purchase-power. But, if by some virtue, capacity utilization of the manufacturing subsidiary in a LDC could be increased to an economically efficient level, production costs of per unit output would be reduced drastically. Reduced costs of production imply lower prices, which in its turn, through income effect, implies higher disposable income for households. If the output of foreign subsidiary is a substitute for something locally produced, it may cause lower prices through competition.

In addition to lower prices generated an interesting characteristic of foreign manufacturing subsidiaries is that they "are generally characterized by price rigidity and therefore relative price stability. In consequence, from the point of view of the imports of developing countries, relative price stability, in periods of normal, inflationary economic conditions, could be an advantage." {70:p.8}

Taxes:

Tax revenues play a vital role in the process of economic growth and development. The ratio of taxes to gross national product (GNP) appears to be lower in developing countries than in developed countries. So, there seems to be a great potential to increase the taxes collected with the purpose, among others, to accelerate the economic growth. Vernon notes that in 1972 U.S.-based MNEs "paid only \$ 1 billion to the U.S government on their foreign income, yet in that year they generated \$ 24 billion of taxable income abroad and paid \$ 13 billion in taxes to foreign governments." {86; p. 124} It is likely that the developing countries acquired only a small portion of these taxes paid abroad by U.S. subsidiaries due to inherent inefficiencies of tax administration.

However, the developing countries do not only seem to suffer from inefficient tax administration (collection of taxes) but also from inefficient and inappropriate tax policies. As an example we can point out to the tax-holidays and tax-concessions granted to foreign investors. Such tax concessions deprive the host country economy from valuable and indispensable sources of income, thus constraining the pace of economic growth. In the absence of tax concessions, however, the state could collect greater tax revenues, thus

maximizing the resources to redistribute and/or to accelerate economic growth.

Table: III-8 Taxes Paid by Foreign Capital Firms and Share in Total Tax Revenue.

| Years | I | | II | | I/II (%) |
|-------|----------------------|------------|----------------|----------------|----------|
| | Taxes Paid by F.C.F. | Change (%) | Total Revenues | Tax Change (%) | |
| 1980 | 24,338 | - | 749,849 | - | 3.20 |
| 1981 | 38,379 | 57.70 | 1,190,204 | 58.80 | 3.20 |
| 1982 | 56,566 | 47.40 | 1,303,038 | 9.50 | 4.30 |

Source: U. Bozkurt, 1986, YASED, p.22, Table:20

Table: III-9 Composition of Taxes of Foreign Capital Firms (%)

| | 1980 | 1981 | 1982 |
|----------------------------------|--------|--------|--------|
| Corporate Tax | 7.50 | 23.30 | 25.70 |
| Income Tax | 4.00 | 2.60 | 1.90 |
| Production Tax | 25.50 | 17.50 | 15.60 |
| Customs Duty | 28.60 | 25.70 | 28.20 |
| Real Estate Property Tax | 0.40 | 0.40 | 0.50 |
| Income Tax on Personnel Payments | 29.00 | 26.10 | 23.10 |
| Other Taxes | 5.00 | 4.40 | 5.00 |
| Total Taxes Paid | 100.00 | 100.00 | 100.00 |

Source: U. Bozkurt, 1986, YASED, p.23, Table: 21

U. Bozkurt (1986), studying the taxes paid by foreign subsidiaries in Turkey, found that the share was only 3 percent of the total taxes collected in 1980 and 1981, and 4 percent in 1982. (See Table: III-8) And the composition of taxes paid by subsidiaries displays that customs duties represented the highest source of income for the Turkish state, while income-tax payments were the lowest of all, only 1.9 percent, of the total taxes paid by subsidiaries in 1982. (See Table: III-9) This outcome is mainly the result of heavy import-biased growth strategies in Turkey until 1980. It is most likely that the composition of taxes paid to the host-country states by manufacturing subsidiaries would have been different under different growth strategies.

III-3: MAJOR COSTS ARISING FROM FOREIGN DIRECT INVESTMENTS

With respect to the limited domestic markets, the effects of scale economies on prices and various market imperfections prevailing in developing areas, MNEs tend to prefer investment in markets protected by tariff and non-tariff barriers and regulations to produce for the local market, as distinct from export-oriented investments. They move in order to retain or to gain a proper share of the secured market. The trade policy of the host country and the targets of foreign investor display different features in case of export-biased foreign investments. What both import- and export-biased economic policies tend to have in common towards foreign investment, however, is the various generous financial incentives and concessions granted to foreign investors with the hope to attract more foreign investment, hence to accelerate the economic growth, increase employment, and solve other related problems. But, these incentives and concessions granted are not always in line with the development plans and aspirations of the developing countries. Magdoff-Sweezy claim that there are "profound conflicts of interest between multinational corporations and the foreign countries in which they operate,"{44:pp.21-22} and classify the conflicts in terms of "six major fears" as follows:

- 1- Fear that the international corporation will take too much and leave too little.
- 2- Fear that the international corporation will crush local competition and quickly achieve a monopolistic dominance of the local market if not the local economy.
- 3- Fear of becoming dependent on foreign sources for modern technology needed for national defense, and for being competitive in world markets.
- 4- Fear that the international corporation's local subsidiary will be used as an instrument of foreign policy by the government of the parent company.
- 5- Fear that the good jobs will be given to nationals of the parent company and not to local nationals.

6- Fear that decisions will be taken by the parent company in callous disregard for their impact on the local town, province, or even on the national economy." {44:pp.21-22}

It is a commonly accepted fact that the interests of the recipient country and the foreign investor, not to mention the home country, are "not" always compatible, in contrast to the expectations of Neo-classical model. Markets are characterized by various forms of imperfections deviating from optimum allocation of resources and production of Neo-classical theory. Imperfections in the markets of productive knowledge (technology), factors of production, and commodities are the major ones. But, to what extent these imperfections justify the "six major fears" presented by Magdoff-Swezy is subject to empirical investigations.

It has often been observed that the foreign investors enjoy monopolistic / oligopolistic advantages in the host country over the quantity / quality of production, distribution, source of inputs, and finance, prices, quantity / type of exports, and the method of production. These monopolistic/oligopolistic advantages may cause serious adverse effects on the economy of recipient country, such as imbalance-of-payments, "non-transfer" of technology, deterioration of income distribution, application of inappropriate production method, and the introduction of inappropriate (luxury) products. The extent of benefits depends largely on the bargaining power, technical absorptive capacity and the success of economic policy pursued in the recipient country.

In the initial phases of foreign investment, the benefits accruing to the host country tends to be greater than the costs involved. After all, the foreign investor increases the national capital stock and employment (assuming newly formed subsidiary, not a take-over), improves foreign currency reserves, increases gross domestic product (GDP), introduces advance managerial / technical and organizational skills, and generates local competition (product diversification). As the foreign investor usually pays higher average wages and salaries than the going market wage-rate or salaries, the share of labor in national income improves. But after a time-span, say 5-6 years, the visible and invisible foreign exchange transfers tend to repay the initial flow and indicate a negative impact on balance-of-payments account in the succeeding years, especially under import-substitution. Moreover, due to high capital intensity of production, employment generation often falls short of expectations. Arguments criticizing the distribution of costs and benefits between the parent firm and the subsidiary gains weight. As the IMF (1985) report says;

"Concern that some of the activities of the enterprise might have adverse consequences for a country's development prospects may lead to the adoption of restrictive policies toward foreign direct investment. This concern has been reinforced by dissatisfaction with some of the earlier investments." {32:p.9}

The costs arising from the foreign direct investment can be studied in two major groups as;

- 1- Pre-investment (initial) costs; and
- 2- Post-investment costs.

Pre-investment costs cover all the expenses on pre-investment feasibility studies, management consultancy, construction of the administrative building and production plant, and other related expenditures. Depending on the nature of investment, at least some of the costs are financed by the host country share-holders. Pre-investment costs accruing to the host country constitute a relatively small portion of long-run total costs, and are easy to measure by the available data. Post-investment costs, on the other hand, cover all the expenditures accruing to the host country in the period commencing from the operation of plant, and appear to burden solely the host country economy. The major post-investment costs can be classified in five groups:

- 1- Foreign exchange costs (remittances of profits, royalties, dividends, interest on foreign loans, salaries of foreign personnel, import of machinery, equipment and raw-materials)
- 2- Tax-concessions.
- 3- Economic dependence and vulnerability.
- 4- Inappropriate technology.
- 5- Restrictive clauses.

Foreign exchange costs and tax-concessions are statistical concepts and as such are easy to identify and measure in the national statistical accounts. Items 3 and 4, on the other hand, are analytical concepts and as such rather cumbersome to measure the extent of related costs. Costs arising from the restrictive practices of business firms constitute the core of this section, and are closely inter-related with other costs. The provisions of restrictive practices depend mainly on the bargaining power of related parties, e.g. the foreign investor and the host country. It is important to note that if the subsidiary to be established is a wholly-owned (100 percent) subsidiary, there would be no need to have a written contractual agreement between the parent

and the subsidiary as the latter would receive instructions directly from the head-quarters. Restrictive business practices will be studied under a separate head-line below because of the importance attached to them.

Foreign Exchange Cost

Foreign investment is assumed to make a positive contribution to the balance-of-payments account of the recipient country. However; "Although the initial impact of MNC investment is to improve the foreign exchange position of the recipient nation, its long-run impact may be to reduce foreign exchange earnings on both current and capital accounts. The current account may deteriorate as a result of substantial importation of intermediate products and capital goods while the capital account may worsen because of the overseas repatriation of profits, interest, royalties, management fees, etc." {64:p.344}

According to a former Assistant Secretary of Commerce, Professor J.N. Behrman, "the receipts of the multinational corporations normally pay for the initial capital outflow in the balance of payments within about two years." {21:p.158} On the country basis the ratio of capital outflows to capital inflows had increased sharply from 78 percent in 1970 to 230.8 percent in 1978 in Nigeria, a triple increase in 8 years. {51:p.41} In Chile; "Net factor payments abroad represented for 1966-1970 an annual average of almost \$ 200 million. This figure represented around 3.2 percent of GDP or 21 percent of the country's average annual export earnings over the same period. Net private foreign capital inflows amounted to only about one-fifth of the net factor payments abroad for 1966-1970." {68:p.VIII} And so on we can multiply the examples of capital (foreign currency) outflows far exceeding the initial inflows after some years.

Table: III-10 shows that the annual average growth rate of capital outflows as payments to the parent firm was rather high during the period-I before 1970 in three Latin American countries, Argentina, Brazil and Mexico, but fell sharply in 1970s in Argentina and Mexico, probably as a result of government intervention in the foreign exchange market. By 1976, also the payments abroad as percentage of exports by Latin American countries fell considerably in comparison to payments in 1970; in Argentina from 3.4 percent to 0.8 percent, in Brazil from 3.8 percent to 2.6 percent, in Colombia from 2.6

percent to 0.9 percent, and in Mexico from 8.6 percent to 5.4 percent, in respective years. {68:p.26, Table:9}

Table: III-10 Growth of Transfer of Technology Payments in Selected Developing Countries.

| | Annual Average Period-I Rate of Growth | | Annual Average Period-II Rate of Growth | |
|-----------|---|-------|--|-------|
| | ----- | ----- | ----- | ----- |
| Argentina | 1965-70 | 26.9 | 1971-78 | 9.6 |
| Brazil | 1965-69 | 20.9 | 1970-76 | 16.7 |
| Mexico | 1953-68 | 15.0 | 1970-76 | 6.0 |

Source: UNCTAD, 1980, TD/B/C.6/55; p.26, Table:10

A survey by the U.S. Chamber of Commerce of 64 MNEs reported that "while U.S. multinational corporations have expanded both exports and imports rapidly and substantially, they are making a major contribution to export development, enjoy a growing balance of payments and trade surplus." {21:p.179} S. Lall (1980) estimated that "of total U.S. manufactured exports of \$ 31.7 billion in 1970, MNCs accounted for \$ 21.7 billion, or 68 percent. {41:p.94} And, according to Fatemi & et.al (1976), "United States' `basic' balance of payments, which includes long-term capital in addition to the current account, indicates that the private sector has been in surplus every year since 1950." {21:p.160} Data displayed on Table: III-11 seem to support Fatemi & et.al.'s findings on U.S. balance of payments. As the Table shows, direct outflow of capital comprised about 40 percent of the capital inflow from the U.S.-based enterprises between 1966 and 1975. In other words, the capital outflow from the U.S.-based subsidiaries to the parent firm in the U.S. was around 2.4 times than the total capital inflows to subsidiaries. Excluding the royalties and other revenues, we find that the net capital outflows `to' subsidiaries in developing countries consisted only one-third of capital outflows `from' the subsidiaries of U.S.-based enterprises. It seems that except for the initial year(s), foreign investment tends to improve the foreign exchange account of parent firm (thus the home country of investment) instead of vice versa.

Table: III-12 demonstrates the impacts of foreign subsidiaries on the balance-of-payment account in Turkey. It clearly indicates that the foreign exchange cost of subsidiaries was in excess of foreign exchange gains in 1970s. Exports from the subsidiaries could only account for 11-12 percent of the direct

imports by subsidiaries, and the ratio of total foreign exchange inflows to total foreign exchange outflow from the subsidiaries averaged at around 19 percent. Low ratio of exports to imports by subsidiaries is largely an outcome of the heavy import-biased growth strategy pursued in 1970s. But the overall impact of foreign investment on foreign exchange reserves was negative between 1973 and 1976 in Turkey. T.G. Uras (1979) asserts that the foreign exchange cost of subsidiaries is under-estimated, as the indirect import costs (imported components of certain local inputs) are not reflected in the figures. In contrast to the declared foreign exchange cost of 30.7 percent of total costs by producers, Uras found a figure around 60 percent of total cost. As an example, Uras pointed out that a producer in the electrical equipment sector had declared the components purchased from another firm as Turkish made, while in fact the latter firm's import content was around 90 percent. {84:pp.211-3}

Table: III-11 Capital Flows of U.S. Enterprises 1966-75
(million dollars)

| | | Total Flows 1966-75 | Annual Average | B/C (%) |
|----|------------------------------|------------------------|-------------------|------------|
| A- | Royalty and other revenues * | 20,388 | 20,388 | - |
| | | | | |
| B- | Direct revenues from FDI ** | 69,651 | 6,965 | 1.60 |
| | of which from: DCs | 27,924 | 2,794 | 0.90 |
| | LDCs | 39,064 | 3,906 | 3.00 |
| | | | | |
| C- | Net Capital Outflows | 44,047 | 4,405 | |
| | of which to : DCs | 28,623 | 2,862 | |
| | LDCs | 12,975 | 1,298 | |

Source: SCB, Oct. 1975; Aug. 1976; June 1976; Oct. 1968
{87:pp.217-8,Table:43}

* : Only for U.S. based enterprises.

** : Includes dividends and interest rates, excluding reinvestment funds abroad.

Reflecting on a study by H.C. Bos on foreign investments in the manufacturing sector in 5 countries (India, Philippines, Ghana, Guatemala, and Argentina), Bergsten-Horst-Moran (1978) found the foreign investment

effect on national income to be generally positive. But; "By contrast, the effects on the balance of payments were generally negative and the net income effect of foreign direct investment was in each case less than the value added directly by such investment, implying that its indirect effects were negative on the gross national product.

Table: III-12 Balance of Payments Effects of MNE Subsidiaries in Turkey. (000 TL.)

| | 1973 | 1975 | 1976 |
|--|-----------|-----------|-----------|
| OUTFLOWS | | | |
| I- Major Items | 659,458 | 659,458 | 464,328 |
| 1-Profits Transferred | 125,041 | 148,966 | 210,328 |
| 2-Tech.Ass.& License Fees | 43,161 | 413,567 | 192,580 |
| 3-Foreign Credit Repayment and Interest Rate | 485,243 | 413,567 | 192,580 |
| 4-Foreign Personnel's' Salary | 6,013 | 6,654 | 8,458 |
| | | | |
| II- Direct Imports | 4,129,993 | 8,062,340 | 7,815,544 |
| | | | |
| III-Foreign Currency Allocation | 108,114 | 134,973 | 99,295 |
| 1-From Investment Quotas | 82,564 | 128,338 | 96,048 |
| 2-For Export | 25,550 | 6,635 | 3,247 |
| | | | |
| IV-Total Foreign Currency Outflows | 4,897,505 | 8,833,394 | 8,379,167 |
| | | | |
| INFLOWS | | | |
| I- Foreign Capital Flow | 216,467 | 1,181,551 | 627,390 |
| II- Exports | 459,639 | 851,472 | 958,538 |
| III-Total Inflow of For.Currency | 676,106 | 2,033,023 | 1,585,928 |
| | | | |
| DIFFERENCE | - | - | - |
| | 4,221,399 | 6,800,371 | 6,793,239 |
| | | | |
| Export / Direct Import | % 11.1 | % 10.5 | % 12.2 |
| Total Direct Foreign Currency | | | |
| Inflows / Outflows | % 13.8 | % 23.0 | % 18.9 |

| | | | |
|----------------------------------|--------|---------|--------|
| Export / Major Items and Foreign | | | |
| Currency Allocation | % 59.8 | % 110.4 | % 58.8 |

Source:T.G. Uras, 1979, Tuerkiye'de Yabancı Sermaye Yatırımları. p.221

Using a different approach, Paul Streeten compares net benefits over five to seven years in the late 1960s, in relation to the net benefits of either importing the products or obtaining the capital in non-equity forms (with technology and other factors constant). In terms of balance-of-payments effects, the overwhelming number of firms exported more foreign exchange than they earned. The export performance of the overall sample was unimpressive. Only fifty-eight of the firms generated capital flow into the host country. And 40 percent of the firms imported over 30 percent of the value of their sales, while nearly 60 percent of the firms imported over 20 percent." {10:pp.358-360} Consequently, Bergsten-Horst-Moran conclude that "the quite different P. Streeten and H.C. Bos approaches yield the same result, that foreign direct investment has a negative impact." {10:p.360}

Intra-Firm Trade

A significant share of international trade is intra-firm, between the subsidiary and the parent firm. This situation provides the basis for transfer-pricing mechanism (under-pricing of exports and over-pricing of imports of the subsidiary) in transactions with the parent firm or a related third party. It is difficult to make a sound estimate of such costs due to scarcity of data, but they certainly are not of insignificant amount. (see Chapter III-4) MNEs have the facilities to manipulate the intra-firm prices in their favor, especially in developing countries due to inefficient administrative policies.

Royalties

Royalties are one of the main elements of foreign exchange costs and "they are normally specified as a payment equal to certain percentage (2-5 percent and sometimes more) of the sales or gross value of production. Alternatively the clauses may specify payment of a lump sum, e.g. \$ 1 million, or of a lump sum plus some element which arises with sales or with some other magnitude." {67:pp.24-25} Fees and royalty payments from Latin American

countries to the U.S. based companies amounted to \$ 116 million in 1960, \$ 287 million in 1968, \$ 311 million in 1970, and \$ 404 million in 1978. {76:p.21,Table:6}

Table III-13 shows that while the proportion of payments of royalties and management fees to the total receipts of U.S. based MNEs decreased slightly in Latin America from 88 percent in 1956 to 82 percent in 1976, the corresponding proportion in other developing countries and the world average increased considerably in the same period. The declining proportion for Latin America could perhaps be explained by the restrictions on royalty payments between the subsidiary and the parent firm in Andean countries.

In 1972, the foreign investments of U.S. based enterprises had produced a real benefit of \$ 2.8 billion in terms of royalties and fees. The compound annual growth rate of U.S. receipts was around 12.8 percent since 1960. {21:p.101}

Apparently the highest rate of royalty payments occur in the pharmaceutical sector, at least in Colombia. Foreign subsidiaries in that country reported "royalties that were on average 400 percent higher than their declared profits. In the rubber industry they were on the average 53 percent. In the chemical industry, which had the lowest nominal tariff protection, most foreign firms.... reported a ratio of royalties to profits that was below 25 percent." {85:p.86} The ratio of royalties to declared profits in joint-ventures in the chemical industry was higher than the same ratio for subsidiaries, "32.3 percent for three firms and 142 percent for three others." {85:p.87} This situation is quite compatible with the foreign partner's goal to maximize profits at home, while keeping the declared profits low in host country. To prevent such situations, the Colombians had to interfere in the market. As a result, "between 1967 and June 1971, the Comite de Regalias had obtained an estimated annual saving of \$ million..... With regard to Mexico, it has been estimated that between 1973 and August 1975, the Registro Nacional de Transferencia de Tecnologia had obtained a saving of \$ 216 million, equivalent to 26 percent of the value of payments that would have been made without the existence of governmental intervention." {76:p.15}

Table: III-13 Proportion of Total U.S. Receipts from Royalties and Management Fees which are Intra-firm.

| | World | Latin America | Other Developing |
|------|-------|---------------|------------------|
| 1956 | 64.00 | 88.00 | n.a. |
| 1960 | 62.00 | 83.00 | 72.00 |
| 1972 | 76.00 | 85.00 | 80.00 |
| 1976 | 82.00 | 82.00 | 90.00 |

Source: For 1956 {31:Table:2-2}
For 1960-76 {63:p.19,Table:2}

Repatriation of profits, dividends and the intra-firm interest rate on loans constitute another significant portion of foreign exchange costs accruing to the recipient country. According to Parry (1980), it is unlikely that "the MNE would exercise monopoly power so as to make monopoly profits within the host country, unless there are no disincentives in fact to do so." {55:p.129} He considers it more likely that "the MNE would attempt to minimize apparent returns in the host country, either to avoid host country taxation or to maintain a 'good corporate image'." {55:p.129}

Studying the data on the transfer of foreign corporations from Turkey in 1973, we observe that the transfer of profits constituted 99 percent of total 'visible' transfers in consumer goods sector. (see Table:III-14). Unfortunately, there is no data available on the transfer pricing in Turkey to make a comparison of visible and invisible transfers. On the subsidiary level, Unilever operating in food industry with an invested capital of 44.7 million Turkish Lira (TL), transferred foreign currency to the parent firm equivalent to TL 100 million between 1969-74. Auer in household appliances sector had made an investment of TL 1.8 million, but its transfers during the same period were worth of TL 2.1 million. In the chemical sector, the paint producer DYO had invested TL 4 million, while its transfers had reached to TL 15.1 million, almost 4 times as much as the original capital invested between 1969 and 1974. {2:pp.175-6} And in Latin America, the interests and dividends repatriated from the U.S. subsidiaries had an annual growth rate of 12.4 percent between 1970 and 1978, thus increasing the total amount of foreign exchange outflows from \$ 947 million to \$ 2,769 million in this period. {76:p.22, Table:7}

Table: III-14 Transfers of Foreign Subsidiaries Operating in Turkey.
1973 (in %)

| Sectors | Profits | License Fees | Salaries |
|---------------------------|---------|--------------|----------|
| Consumer goods sector | 99.00 | - | 1.00 |
| Intermediary goods sector | 62.00 | 34.00 | 3.00 |
| Investment goods sector | 63.00 | 32.00 | 5.00 |

Source: Ticaret Bakanlıđı, Yabancı Sermaye Anketi {2:p.174, Table:53}

Tax-concessions

One of the most effective instruments of attracting foreign direct investment has been the generous tax-concessions granted by host countries, especially the tax-holidays, e.g. exemption from all taxes for a given time-span, generally for the first five years. Tax-holidays are sometimes succeeded by further concessions in terms of, for example, reduced tax-rates on incomes. Singapore's one of the main attractions in preceding decades has been the government endorsed tax exemptions. The policy of tax-concessions imply for the enterprises not only higher profit rates but also improved oligopolistic competitiveness in international markets. But tax-concessions also imply tremendous loss of revenues for the state.

Table:III-15 Incentive Benefits (Million TL)

| | | 1980 | 1981 | 1982 |
|----|-----------------------------------|--------|--------|--------|
| A. | Customs Duty Exemptions | 5,585 | 9,148 | 12,446 |
| | 1- On imports of investment goods | 882.00 | 1,898 | 3,973 |
| | 2- On imports of raw materials | 4,702 | 7,249 | 8,472 |
| B. | Tax Refunds | 697.00 | 2,070 | 4,880 |
| C. | Refund of Interest Differential | 302.00 | 804.00 | 1,902 |
| | 1- From investment credits | 233.00 | 544.00 | 1,249 |
| | 2- From other credits | 69.00 | 260.00 | 652.00 |
| D. | Exemptions from Duties and Fees | 17.00 | 180.00 | 284.00 |
| E. | | 31.00 | 219.00 | 368.00 |
| F. | Exports Exemption | 2.00 | 2,495 | 3,426 |
| | TOTAL | 6,638 | 14,918 | 23,309 |
| | Total Incentives / Tax Payments | 27.30 | 38.90 | 41.20 |

Source: {12:p.23}

The revenues forgone as a result of tax-concessions increased dramatically in Turkey between 1980 and 1982, at an average rate of 125 percent. {12:p.23} The loss of revenues constituted around 27 percent of the total taxes collected from foreign subsidiaries in 1980, and rose to 39 percent in 1981, and reached the peak 41 percent in 1982. (See Table:III-15) Consequently, taxes foregone

due to tax-concessions had grown at a faster rate than the taxes collected during the same period. "Although the exemption from customs duties constituted a significant proportion of the incentives provided for the foreign capital firms, the share of this exemption in total incentives has decreased from 84 percent in 1980 to 53 percent in 1982. On the other hand, because the foreign capital firms have emphasized exports in accordance with the economic policy implemented in this period, incentives such as tax refunds and the exemption from the corporation tax granted to exports have increased rapidly." {12:p.23}

Economic Dependence and Political Vulnerability

As we have seen in previous chapters foreign investments have a great potential to accelerate the process of development in developing areas by transferring resources and skills, both of which are in short supply. The greater the amount of foreign direct investment (technology transfer) the greater would be the benefits accruing to the recipient country, *cet. par.* But the extent of foreign control of domestic resources and markets has always caused concern in developed as well as developing areas. Many countries are quite sensitive to issues such as control and dependence which can subordinate the national interests to interests of the foreign investors or their home country. "The possibility that the national welfare might be affected by economic decisions taken in foreign countries is unpalatable for political reasons to most if not all of the technology-receiving countries." {67:p.1}

Even the U.S.A., the largest source of all foreign investments is not an exception. For example U.S. Congress saw a potential threat to national interests when the petro-dollars were flowing to the country for investment. Consequently, some counter-measures were taken to protect the national interests. "In ten months, twenty-two new bills against foreign investments have been introduced in the Congress ignoring the fact that the total direct foreign investments in the United States are less than one-tenth of American investments abroad." {21:p.7} Growing concern has also been expressed in Canada over the foreign domination of economy where about 60 percent of manufacturing output is controlled by foreign investors, principally from the United States.

While the Neo-classical economists praise the virtues of market forces and recommend a policy of "hands-off" the market and let the enterprises be

guided by the "invisible hand", the critics of present global economic relations express growing concern about the increasing degree of domination of world markets by the foreign interests, feeling that the national interests are being subordinated. Some articulate elements of the society regard the foreign domination of national economies as a form of "Neo-imperialism". "To many inhabitants of LDCs, the differences between the old colonial relationship and the new ties with MNCs are very small. In a related vein, a significant number of people in LDCs see the MNCs as agents of foreign governments who act to further the foreign-policy objectives of these governments. They point out to the case of United Fruit's operations in Central America as evidence." {23:p.90}

Unfortunately, as the critics point out, the interests of the host and home countries of foreign investors are not free of conflicts. As Fatemi & et.al. (1976) say; "The impact of the multinational corporation raises questions ranging from sovereignty over resources to collusion over distribution and disruption of national priorities. The desired concurrence of multinational corporations' objectives and the nation-states' objectives in areas such as trade and investment flows, technological and managerial transfers, repatriation of earnings, and termination of investments is not automatically guaranteed by an 'invisible hand'. {21:p.197} As S.J.Kobrin put it, "one does not have to be a Marxist to recognize the potential for technological and cultural dependence." {1:p.162} It is quite logical, however, from the point of view of enterprise, to give priority to enterprise's interests. After all, private enterprises are profit maximizing business units.

There are 4 different approaches analyzing systematically the impacts of MNEs on economic and political aspects:

- 1- Neo-imperialist school;
 - 2- Neo-mercantilist school;
 - 3- Sovereignty-at-Bay school; and
 - 4- Global-Reach school.
- 1) Accusing the MNEs for being agents of U.S.A. imperialism producing worldwide inequality and dependency among nations, neo-imperialist school views that "in the developing countries, the penetration of foreign investment allows host countries to develop only in ways that enable them to respond ever more perfectly to the needs of the home countries."

{10:p.315} Interests of the U.S. enterprises are considered synonymous with the national interests.

- 2) The Neo-mercantilist school "sees the nation-state (rather than the capitalist class) as a unitary actor and postulates that the government uses the activities of business abroad to advance the interests of the state." {10:p.324} For neo-mercantilist, the international relations are characterized by the struggle of nations for relative advantage over others. Main objective is the strength of nation, promotion of host-country and international economic welfare is of minor importance.
- 3) Sovereignty-at-Bay school and 4) Global-Reach school regard the MNEs "as independent forces constraining the actions of all the states they touch." {10:p.329} As 'apolitical' and 'anational' institutions, they are assumed to grow at the expense of both home and host countries. But in contrast to the sovereignty-at-bay school, "the global reach school holds that multinationals stifle competition, cartelize world markets, worsen income distribution, and create poverty." {10:pp.333-4} It seems to be the common belief of both schools that MNEs strive mainly to serve their own objectives with respect to global resources and opportunities. National objectives of both home and host countries coincide only by coincidence with MNE objectives.

The key economic decisions resting in the hands of foreign interests may sometimes generate unwelcome political consequences in addition to economic implications. The MNEs often attempt to influence the host country economic policy in line with their objectives. But when they fail, especially in critical issues or periods, they expect the home country state to interfere on their behalf to take pre-emptive or retrospective measures.

Reflecting on the political strength of MNEs, Fatemi & et.al. say that; "Politically they have at times proved themselves too powerful a lobby -as in the ITT case- and legally they are often beyond the power of international courts." {21:p.197} In fact, at occasions, the MNEs are alleged to operate as states within states in the developing areas. "For example, in the 1960s the Colombian government attempted to reduce tariffs in the electronics industry. That policy was never carried through because of the reaction of existing national and foreign firms. Total prohibition of competitive imports was one of the conditions of entry negotiated by prospective investors." {85:p.73} A more recent example is the ITT's interference in Chile where the president

elected was thrown out of the office by force before he could implement the drastic economic changes. "In Venezuela, a military Junta overthrew Romulo Betancourt twelve days after he announced a mandatory 50-50 profit split." {10:p.134} In 1953, "under the pretext of keeping the petroleum reserves from falling into the hands of the Soviets" {10:p.323} the U.S. government had helped the British to overthrow Mosaddeq government in Iran. When Libya planned to nationalize some of the U.S. oil companies, President Nixon warned him in 1973 to remember Mosaddeq's faith and "what happened to him after nationalizing Iran's oil industry in 1953." {21:p.214}

There are many other examples of the kind around the world. Such incidences tend to support the claims that foreign subsidiaries serve principally parent firm interests, and, when necessary, the home country interests to the detriment of host countries. Bergsten-Horst-Moran (1978) claim that; "The effect of American multinationals on the national interest is far broader than their effect on the national economy. Multinational corporations affect the distribution of power, the level of tension, and the structure of relations between home and host countries." {10:p.309}

A host country's vulnerable economic position would be deteriorated when the parent company or the home country government imposes restrictions on the flow of essential inputs of production such as technical know-how, raw materials, components, etc. Trading With the Enemy Act and Export Control Act of the U.S. are just two examples of the government imposed restrictions. Such restrictions can be used as an instrument of "influence" in cases of conflicts or disagreements with the host country, and could retard the development efforts or cause destabilizing effects. It has frequently been observed that in times of "disagreements", the home country government would not hesitate to use its power over the parent companies to serve national interests.

Technological dependence represents another important aspect of economic dependence on external factors. UNCTAD fears that "The large scale transfer of technology from abroad may inhibit the development of local technological capability and thus make technological dependence on the developed countries virtually perpetual." {67:p.1}

Inappropriate Technology

"The technologies transferred to developing countries are themselves often inappropriate both as to factor-use and product type," {67:p.1} especially in import-biased countries where domestic market is protected by trade policies. Inappropriateness of foreign technology depends primarily on the economic policy pursued and the technological absorptive capacity of the host country. The nature of economic policy is important because it effects "what" kind of commodities are produced and / or "how" they are produced (whether capital-versus labor-intensive). It is commonly accepted that the contemporary commodities and production methods are developed in developed countries in response, or with respect to, relatively high incomes, specific tastes and production factor costs. Production of such commodities in developing areas, therefore, stimulates inappropriate consumption patterns. Accordingly, the production methods employed ("how" the commodities are produced) reflects the specific conditions prevailing in industrialized countries, such as abundance of capital, relative scarcity of labor-power, high purchase-power and higher real wage rate. Transfer of production methods reflecting the characteristics of advanced nations is, by assumption, bound to be inappropriate.

The technological absorptive capacity of host country also affects the outcome of technology transfer. If the technological capacity in terms of infrastructure and skilled manpower is inadequate, the evaluation, selection and adaptation of foreign technology is quite unlikely to generate satisfactory results. The technology owner is usually in a better bargaining position in comparison to developing countries and can easily influence the specific conditions of technology transaction, thus depriving the host country from valuable productive knowledge.

The imposition of conditions of technology transfer in line with the developed country standards often leads to the misallocation of resources in host country. Employment generation often falls short of expectations. Under import-substitution, under-utilized plant capacity constitutes one of the major problems which imply higher unit costs of production. Before Turkey changed her economic policy in favor of export-biased growth strategy in 1980, one of the major problems was capacity under-utilization. {20: p.262} And the main reason of capacity under-utilization was the shortage of imported intermediary inputs, which in its turn was caused by foreign exchange shortage.

The MNEs do not seem to pay sufficient attention to the relative factor prices in potential host countries, for they often fail to make adjustment to local conditions in production methods. In other words, they seem to fail to take advantage of cheaper labor-power and employ more labor-intensive techniques. Adaptation of imported technology to local conditions could maximize employment, reduce costs of production, and redistribute income in favor of the labor. This would also be rational behavior from the point of economic optimality.

In countries with full-fledged export-biased economic growth strategy, the inappropriateness tend to appear as "non-transfer" of technology implying that the foreign investor sets-up a plant merely to take advantage of the cheap labor force and/or financial incentives. The plant is not committed to the transfer of any productive knowledge to the subsidiary in the host country. In such a case, the main benefit accruing to the host country would be the employment generation, and the wages paid.

Not always a foreign technology is superior to the local ones. In fact, in some cases the imported technology or the produced commodities are quite similar to locally available ones. According to UNCTAD (1972); "There is now a certain amount of evidence (mainly from India and some Latin American countries) showing that technologies developed in local laboratories apparently to the point of commercial viability have been passed over in favor of licensed technologies from foreign enterprises for very similar processes and products." {67:p.18} The main reason is probably that the local enterprises and the consumers prefer foreign technology because of the "brand-name" and because of the distrust on local enterprises to maintain certain product quality and after-sale service quality.

III-4 RESTRICTIVE CLAUSES

In theory, the sources of advanced technology are manifold, and this fact seems to place the technology importing nations in an advantageous position against the technology owners. If the developing countries could agree on certain basic principals to act collectively against the MNEs, their bargaining power and the consequent benefits would have been improved significantly. In practice, however, it is the MNEs that enjoy an advantageous position, especially when technically complex projects are involved. The more complex

the imported technology, the weaker the bargaining strength of the recipient tend to be and the more costs tend to accrue. "When transfers of technology take place during a period of long term monopoly, or in a period of 'quasi-monopoly' in a competitive market structure, the technology supplier is in a strong position to dictate the terms and conditions on which he makes the technology process available to a recipient country or enterprise." {67:p.7} Thus, the complexity of the technology and the bargaining power of recipient developing country appear to be the major causes of technology market imperfections.

In this imperfect market for technology, the transactions in technology often take the form of "package deals" accompanied by explicit written or implicit and unwritten contractual clauses between the technology supplier and the recipient. There are three major reasons for packaging the technology;

- 1- packaging enables the technology supplier to exercise considerable degree of control over key issues such as price, source of inputs, exports, quantity, etc.;
- 2- packaging minimizes the risks of technical inefficiency in the operation of subsidiary and guarantees a certain degree of quality to protect the image of a "trade-mark"; and
- 3- the technology supplier would be reluctant to see an unchecked diffusion of its technological and managerial skills which can assist the creation of local competitors.

Package-deals can contribute to the acceleration of economic development in developing areas by providing the secure flow of vital inputs of production. But sometimes, they can also become the impediments of economic and technological growth. The most common contractual restrictive clauses to the detriment of developing countries, according to UNCTAD {67:}, are the following;

A- Export clauses

- the export-markets in different countries,
- the exportable quantity,
- the export price,
- the use of trade-marks.

B- The clause to buy certain inputs, intermediate-products or equipment from the parent firm.

- C- The clause on key decision-making process, i.e., certain decisions are to be made only by the personnel who are trained and appointed by the parent firm (decisions such as planning and strategy).
- D- The clause on the volume of domestic production, the method of production, and distribution.
- E- The clause to buy the capital-goods from the parent firm.

The nature of the abusive practices, e.g., restrictive clauses, tends to display similar characteristics across the nations, but their extent and types vary from country to country depending on the economic circumstances. For instance, while in Argentina only 28 percent of license agreements contained territorial restrictions, the corresponding figure reached to 90 percent in Chile, 97 percent in Mexico, and 99 percent in Peru. (See Table: III-16) The main distinction between the license agreement and direct investment is that in the former, the technology owner has no direct control over the operation of plant and on key issues. Therefore, it is a rational behavior for the technology owner to make an explicit written agreement on issues of vital importance. Such an explicit written agreement with a wholly-owned subsidiary, however, would be superfluous.

Meanwhile, in Turkey, contractual agreements had imposed restrictive tie-in clauses on almost every major field of national economy. Tie-in clauses were observed on;

- 1- imported inputs and equipment;
- 2- exports;
- 3- maintenance of tariffs, taxes and foreign exchange policy;
- 4- competitive imports;
- 5- use of expatriate personnel; and
- 6- development of local technical R & D capabilities. {63:p.32}

Table:III-16 Extent Of Prevalence Of Abusive Practices In Licensing Agreements In Selected Countries.

| Country | Total number of contracts analyzed | Territorial restrictions | Limitations on purchase output and sale | Financial provisions | Post expirati on effects | Effects on economy in general (dynamic effects) | Other limitations |
|-----------|------------------------------------|--------------------------|---|----------------------|--------------------------|---|-------------------|
| Argentina | 60 | 28 | - | - | - | - | - |
| Bolivia | 35 | 83 | 83 | - | 45 | - | 48 |

| | | | | | | | |
|----------|-----|----|----|---|----|----|----|
| Chile | 175 | 90 | 14 | - | 31 | 33 | 40 |
| Colombia | 117 | 79 | 77 | - | - | - | - |
| Ecuador | 12 | 75 | 67 | - | - | - | - |
| Mexico | 109 | 97 | - | - | - | - | - |
| Peru | 83 | 99 | 62 | - | 69 | - | 37 |

Source: UNCTAD, 1975, TD/B/AC.11/19/Rev.1, p.21, Table:1

Latin America as a region is probably the most experienced part of the developing world in dealing with the restrictive practices with certain success. In 1973, Mexico had introduced a legislation prohibiting, among other things, unjustified prices, restrictions on exports and obligations to acquire inputs from a given source. "Since the law came into effect in 1973," says F. Stewart (1979), "the Registry has examined about 4,600 agreements. 35 percent were rejected for excessive payments or restrictive clauses; 60 percent were rejected if one excludes majority foreign owned enterprises." {63:pp.58-59} Table:17 demonstrates the most frequent reasons for negative resolutions. "939 (44 percent) of 2,134 determinations of provisions contrary to the law between 1973 and July 1975 were founded on the identification of restrictive practices regulated by the Mexican law." {76:p.32}

Table: III-17 Agreements Rejected For Negative Resolutions In Mexico

| | | As % of rejected Agreements |
|----|---|-----------------------------|
| 1- | Excessive or unjustified payments | 68.5 |
| 2- | Excessive duration of agreements | 31.6 |
| 3- | Prohibition to use non-patented technology or to manufacture goods, at the end of agreement | 30.7 |
| 4- | Submission of agreements to foreign laws or courts | 18.5 |
| 5- | Grant-back clauses on innovations produced by licensee | 16.8 |
| 6- | Export restrictions contrary to the interest of the country | 14.5 |

Source: World Bank Staff Working Paper. No: 344. {63:}

Contracts rejected on the ground of negative resolutions were also experienced in Brazil and Colombia, but to a lesser extent. (See Table:18) The most frequently observed motive for the refusal of submitted agreements was the existence of various restrictive clauses. Another important and frequently appearing reason was the availability of similar local technologies. Some of the contracts were approved, however, after "renegotiations" with the supplier of technology. {76:}

Table: III-18 Percentage of Technology Contracts Rejected
(as a portion of contracts processed)

| | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 |
|----------|------|-------|-------|--------|------|------|-------|------|
| Brazil | 0.00 | 2.30 | 3.90 | 6.8* | - | - | - | - |
| Colombia | - | 19.40 | 11.00 | 19.5** | - | - | 25.00 | 7.20 |
| Mexico | - | 27.00 | .7*** | | - | - | - | - |

Source: UNCTAD, 1980, TD/B/C.6/55, p.33, Table: 12

* : to June

** : to May

*** : from 1973 to June 1975

As mentioned above, not all agreements have to be explicit written ones. "Some 'highly packaged' transfers -particularly between parent companies and wholly-owned subsidiaries- have all the essential characteristics of transfers under license contract, but do not involve a formal contractual agreement. The commercial terms on which these transfers are made are not written into a formal document, simply because they do not need to be. The parent company which supplies the technology to the subsidiary is anyway in control of all its commercial operations and the terms of any particular transaction need not be specified." {67:p.20}

Restrictive clauses generate various serious handicaps for the technology recipient country on the path of economic growth. Sometimes they are so extensive and far reaching so that, as C.V. Vaitsos put it (1974), there seems to remain only one major decision to be made by the technology recipient; whether or not to enter an agreement.

In the following sub-chapters, we will study the impacts and extent of some restrictive practices in developing countries, starting with the transfer-pricing mechanism.

Transfer-Pricing

Transfer-pricing is perhaps the most efficient and frequently used means of the transfer of company revenues (e.g. invisible profits) from the subsidiary to parent firm. Empirical evidence indicates that a significant portion of the

parent firms' overall profits consist of such clandestine profits from the subsidiaries transferred through the transfer-pricing mechanism, i.e., overpricing of imports and/or under-pricing of exports. "The transfer prices used in such intrafirm transactions can diverge from the equivalent "arm's length" market price that would be set in trade between unrelated parties. Although under- or over-invoicing to shift profits for tax purposes, or to evade foreign trade taxes or exchange controls, is a problem for all foreign trade, the opportunities for such actions are clearly greater in intrafirm trade." {32:p.12} And the MNEs do not seem to overlook such opportunities. S. Lall (1980) reflecting on the transactions of U.S. based MNEs pointed out that "the value of declared earnings on foreign manufacturing investment was far exceeded by the value of intra-firm trade, and a mere 12 percent change in transfer prices in 1970 would have equaled the entire dividends and interest earned abroad. If we included royalties and management fees, an 18 percent change in prices would (ignoring tax-tariff problems) suffice to exceed the total sum of earnings abroad." {41:p.121}

Dismissing the possibility of existence of arm's length prices, or market prices, A.M. Rugman {59} attempted to justify the transfer-pricing mechanism on two accounts. First, he said, "When there is no (external) market there is no market price. Conversely, when there is an internal market created by the MNE within its own organization then the resulting transfer prices are the correct ones. Without them the internal market might not exist, so the MNE is entitled to charge whatever prices it wishes for intermediate products provided it produces final goods which can be sold openly..... Secondly, the transfer prices are created by the MNE in response to market imperfections. If governments regard transfer pricing as a potential abuse of the power of MNEs then there is a ready solution at hand. This is to harmonize international tax rates, eliminate exchange controls and other barriers to capital flows imposed by governments." {59:p.84} Rugman regards such policies as first-best solutions which can remove the incentives for transfer-pricing.

What Rugman suggest as the first-best solution seems to be rather utopian regarding the present economic world order and relations. But even if such an ideal world could come to exist, there would also be a dilemma of redistributing the global incomes justly among the nations irrespective of the development level. Returning to our actual world, transfer-pricing mechanism tends to redistribute income in favor of the industrialized countries and affect the global trade patterns. The MNEs do not only respond to market

imperfections, as Rugman suggests, but they also cause some of the imperfections, for example in the technology market. Moreover, many foreign investments would not have taken place in developing countries in the absence of various incentives, e.g. market imperfections, such as trade restrictions or tax-holidays. So the MNEs appear to encourage market imperfections indirectly. Instead of trying to find ways and means to justify the abuses of power, developing countries should find and impose counter-acting measures to minimize the clandestine costs arising from transfer pricing which implies;

- 1- loss of tax revenues to the state;
- 2- higher consumer prices (when imports are over-priced);
- 3- less dividends for the local share-holders;
- 4- deteriorated foreign exchange reserves; and
- 5- deteriorated export potential (when imports are over-priced)

The rate of transfer-price can be estimated by the following formula:

$$\text{Transfer price} = 100 * \frac{(\text{FOB price paid by the importer}) - (\text{FOB world market price})}{(\text{FOB world market price})}$$

Transfer-pricing mechanism is closely related to the restrictive clauses obliging the technology recipient;

- a) to buy the necessary capital goods and other inputs of production from the sources, and at the prices, determined by the technology supplier (over-pricing); and
- b) to sell the subsidiary's output to customers, and at prices, determined by the technology supplier (under-pricing).

Such restrictive clauses might be implicit and/or unwritten, or explicitly specified depending on the nature of relationship between the subsidiary and the parent firm.

Empirical data indicates that the provisions of contractual clauses are used mainly for over-pricing purposes, rather than under-pricing. As such, over-pricing constitutes an additional source of revenue (loss) for the technology supplier (importer). While over-pricing of inputs and capital goods in intra-

firm trade contributes to the maximization of global earnings for the MNE, it represents severe losses of scarce foreign exchange for the host country. Studies in different industrial sectors in Latin America showed that over-pricing up to 200 percent was not uncommon. In some extreme cases, it reached to 500 percent or more. The measured average over-pricing was 155 percent for all foreign subsidiaries and 19 percent for the local firms. {67:} "In one case, for example, the payments made through the over-pricing of intermediate inputs were equal to six times the payments made in respect of royalties and equal to twenty-four times the total declared profits of firms involved in the industry." {67:p.26}

For some particular products, it is hardly possible to estimate the extent of over-pricing. As Vaitsos put it, for instance, "there is no such thing as an international market for Volkswagen doors for estimating over-pricing." {85:p.52} Empirical findings suggest that the price differences between world market and intra-firm trade have always meant a serious obstacle to development. "A foreign private corporation, for example, was selling to its own subsidiary machinery at 30 percent higher prices than the same machinery sold by the same parent to a Colombian of its subsidiary. Another foreign company, in the extractive industry, applied for an import permit for machinery initially valued at U.S. \$ 1,800,000. When the responsible government agency evaluated the procedures by which this figure was reached, it discovered that its value was only U.S. \$1,000,000 Another foreign company in the paper industry applied for the importation of used machinery which, it claimed, was worth U.S. \$ 1,200,000. When the responsible government agency asked for quotations on new models of the same machinery in the 'international market', the 'highest price' was U.S. \$ 800,000." {85:p.52, footnote} In Turkey, T.G. Uras (1979) found 50 respective 85 percent higher transfer prices in the import of natural and synthetic rubber, respectively. {84:p.210, Table:26} The rate of transferable profits in the rubber sector was 12.3 percent of sales 40 percent invested capital for the 3 foreign subsidiaries. Chilean experience of transfer-pricing appears to be rather extreme where "for some products the range of the difference was in excess of 500 percent and in the majority of the cases was between 30 and 500 percent, i.e., a price charged to the technology buyer which is five times the price ruling elsewhere in the world." {67:p.26}

Various studies in Latin American countries indicated substantial over-pricing rates, probably the highest of all sectors, in the pharmaceutical sector. In Chile, over-pricing of imported inputs was observed for 35 products out of 50

investigated, covering 39 enterprises. Of the 19 wholly foreign owned subsidiaries, 6 had a rate of over-pricing up to 30 percent, 3 had between 31 and 100 percent and the remaining 10, or around 50 percent of all firms, had a rate of more than 100 percent. Of the 20 wholly locally owned enterprises, only 2, or 10 percent, showed an over-pricing

Table: III-19 Incidence of Over-pricing in the Pharmaceutical Sector in Chile.

| Degree of overpricing of imported goods * (%) | Number of products overpriced in a sample of 50 | Number of enterprises covered by the sample *** | |
|---|---|---|----------------------|
| | | Wholly domestically owned | Wholly foreign owned |
| 1 - 30 | 8.00 | 13.00 | 6 |
| 31 - 100 | 15.00 | 5.00 | 3.00 |
| over 100 | 12 ** | 2.00 | 10.00 |

Source: CORFO, 1971, Costos implícitos de la transferencia de tecnología. in {68:p.23,Table:11 }

* : Percent above international prices for same products.

** : Over-pricing above 100 % was noted for these 12 products:

| | | | | |
|-----------|---------|-----|---|----------|
| 100 - 200 | percent | for | 4 | products |
| 200 - 300 | " " | 1 | " | |
| 300 - 400 | " " | 3 | " | |
| 400 - 500 | " " | 2 | " | |
| 500 - 800 | " " | 2 | " | |

*** : The sample covers 39 enterprises: 20 wholly domestically owned and 19 wholly foreign owned. The degree of overpricing for each enterprise is a weighted average of overpricing of the 50 products as imported by each firm. Rate exceeding 100 percent. (see Table:III-19) It seems that the wholly foreign owned subsidiaries indicate a greater tendency towards higher rates of over-pricing of imported commodities.

In a pioneering study Vaitos (1974) showed that in Colombia, in the pharmaceutical sector, the technology supplying foreign firms over-priced their exports to subsidiaries in intra-firm trade by an average rate of 155 percent above the international prices. All foreign wholly owned subsidiaries in that sector "reported in 1968 a 6.7 percent return on investment on the basis of declared profits. If one defines as effective profitability, accruing to the foreign resource transferor, the declared profits plus royalty payments plus the over-pricing of intermediate products imported by the subsidiary, the extrapolated effective return on net worth including reinvested profits was 136.3 percent." {85:p.62} In terms of scarce foreign exchange, "reported profits were U.S. \$ 361,749, royalty payments to the parent corporation about U.S. \$ 1,472,833 and over-pricing of intermediate products about U.S. \$ 8,692,584." {85:p.62} To interpret the figures differently, the share of reported profits constituted 3.4 percent royalties 14 percent, and over-pricing 82.6 percent of effective returns to the parent company. Earnings due to over-pricing were about 24 times greater than the earnings declared as profits, and 6 times greater than royalty earnings. The counter-acting measures introduced later by the Colombian government had saved the country \$ 3.3 million annually out of a total import bill of \$ 15 million, 22 percent of total, in the pharmaceutical sector. {41:p.125}

In a study of 14 foreign subsidiaries in Colombia between 1966-70, S. Lall [1980] also found evidence on over-pricing in intra-firm trade ranging from 33 percent to 314 percent in the pharmaceutical sector, 24 and 81 percent for two firms in the electrical sector respectively, and 40 percent for a firm in the rubber industry (see Table:III-20). Similar results were found by M.J. Katz in a study of imports in the pharmaceutical sector in Argentina where earnings from over-pricing exceeded the declared profits for 9 out of 14 enterprises. The estimated over-pricing for the whole sector was 150 percent. {69:p.58}

The over-pricing of imports by foreign owned subsidiaries in intra-firm trade suggests that the technology supplying parent enterprise tends to prefer transferring its earnings in some disguised form, instead of direct transfers in the form of declared profits or royalty payments. The motives for such an attitude could be summarized as follows;

- 1- to avoid host country taxation;
- 2- to maintain a pattern of "image" in the host country by keeping declared profits and royalties low;

- 3- to maximize the profits in headquarters; and
- 4- to overcome the host country controls and regulations on foreign exchange transfers.

The revenue loss in terms of host country taxation (item-1) is a decisive factor influencing the parent firms to search for, or to take advantage, low tax locations to avoid higher corporate tax rates. Instead of paying full amount taxes, a parent firm would prefer to transfer, at least some of, its earnings through the over-pricing mechanism to the home country, or to a third country providing advantageous tax incentives. In Colombia, if the foreign owned subsidiaries had declared the value of over-pricing as profits in the pharmaceutical sector, the government would have taxed 50 percent of it and saved U.S \$ 1,500,000. {85:p.47}

Table: III-20 Over-pricing By and Profitability of 14 Foreign Firms in Colombia (1966-70)

| Industries & firms | Percent imports investigated 1 | Percent proved overpricing 2 | Declared profits as % net worth 3 | Profits on proved over-pricing as % net worth 4 | Profits on over- pricing total imports 5 | % N.W. (Imputed) 3+5 |
|--------------------|-----------------------------------|---------------------------------|--------------------------------------|--|---|-------------------------|
| Pharmaceutical | | | | | | |
| 1 (A) | 52.1 | 158.3 | 7.6 | 41.5 | 79.6 | 87.2 |
| 2 (B) | 20.1 | 39.5 | 11.2 | 2.0 | 10.0 | 21.2 |
| 3 (A) | 100.0 | 56.6 | 16.5 | 19.6 | 19.6 | 36.1 |
| 4 (A) | 28.1 | 81.0 | 6.3 | 5.6 | 19.9 | 26.2 |
| 5 (A) | 32.4 | 288.9 | 6.3 | 19.2 | 59.3 | 65.6 |
| 6 (A) | 39.1 | 33.5 | 0.1 | 2.5 | 63.9 | 64.0 |
| 7 (A) | 35.2 | 33.7 | 12.4 | 3.1 | 8.8 | 21.2 |
| 8 (A) | 54.1 | 95.4 | -7.4 | 17.9 | 33.1 | 26.1 |
| 9 (A) | 48.6 | 83.7 | 42.8 | 111.7 | 229.8 | 272.6 |
| 10 (A) | 44.2 | 313.8 | 27.5 | 39.6 | 89.6 | 117.1 |
| 11 (A) | 30.9 | 138.9 | 5.9 | 9.9 | 32.0 | 37.9 |
| Rubber | | | | | | |
| 12 (A) | 60.0 | 40.0 | 8.3 | 6.1 | 10.2 | 18.50 |
| Electrical | | | | | | |
| 13 (A) | 22.3 | 24.1 | 8.1 | 0.3 | 1.3 | 9.4 |
| 14 (A) | 30.4 | 81.1 | 0.7 | 1.8 | 5.9 | 6.6 |

Source: S. Lall, 1980; *The Multinational Corporation*. p.126 Table:5-2

- Notes: 1. (A) indicates that the firm is wholly foreign owned, and (B) that foreign investors hold 51-99 percent of the equity.
2. Percent of over-pricing is defined as in footnote 24, and is for the weighted average of all imports investigated (shown in column
3. Declared profits comprise after-tax profits net of depreciation and interest. Minus shows loss.
4. Net worth calculated in terms of constant US dollars.
5. Column 4 shows profits from proved, and column 5 from imputed, over-pricing.

For some people, especially in the developing countries, foreign investments represent a new form of (economic) colonialism and exploitation of indigenous endowments. And to avoid further antagonism in the host country or in international opinion the parent corporation is said to pursue a policy of keeping profits low in the developing host countries. Thus, while preserving its image as a good "corporate citizen" (item-2) it can continue to generate additional income for the parent firm through over-pricing.

In joint-venture investments or partly owned subsidiaries, declared high profits do not only imply a loss of revenue resulting from higher rate of taxation, but also higher returns to local investors. The parent corporation can increase its share of the profits by reducing the profit rate at subsidiary level through over-pricing (item-3).

And finally, the stringent host country foreign exchange controls and regulations (item-4) may induce the parent corporation to resort to other means than royalty payments or profit remittances from the subsidiary. In the case of Colombia, the balance-of-payment costs of over-pricing to the state were estimated to be around U.S. \$ 2,400,000. {85:pp.47-48}

Resorting to various measures ranging from over-pricing to high rates of royalty payments and other related attempts are quite compatible with the parent corporation's goal to maximize global profits. But when these measures result in overall effective returns beyond justifiable limits, they become serious impediments to development. Latin American countries seem to have considerable experience in attempts to eliminate (minimize) the clandestine transfer of resources to home countries of the subsidiaries. Intra-firm payments of U.S. owned subsidiaries, for example, were reduced considerably between 1970-1978, while the annual growth rate of payments from non-Latin American developing areas increased from 12.6 percent between 1960-1969 to 17.0 percent between 1970-1978, or about 14.4 percent greater than the compound annual growth rate of intra-firm trade in Latin America. (see Table: III-21).

Transfer-pricing is not entirely a developing country dilemma. It has also been used in the intra-firm trade among developed countries. As mentioned above, the pharmaceutical sector offers exceptional facilities for over-pricing, thus for clandestine transfer of profits. The most striking example of over-pricing, to our knowledge, is perhaps the case of Hoffmann-La Roche. "The United Kingdom Monopolies Commission, for example, asserted that

Hoffmann-La Roche obtained 76 percent of its income from its U.K. affiliate, Roche Products Ltd. by way of an excessive transfer price on Chlordiazepoxide and Diazepam. The Monopolies Commission claimed that if this amount were added to the declared profits of the U.K. subsidiary, the return on capital earned over the period 1966-1972 would have been over 70 percent." {24:p.227} The U.K. subsidiary used to declare profits at around 5 percent. Similar cases occur throughout the world, but in many cases the host countries are unable, certainly not unfamiliar, to cope with the problem efficiently.

Table: III-21 Fees and Royalty Receipts * by the United States
(millions of U.S. dollars - all industries)

| | 1960 | 1969 | 1970 | 1978 | Compound rate of annual growth | |
|---|---------------|---------------|---------------|---------------|--------------------------------------|--------------|
| | | | | | 1960-69 | 1970-78 |
| All countries | <u>650.00</u> | <u>1,894</u> | <u>2,203</u> | <u>5,417</u> | <u>12.60</u> | <u>11.90</u> |
| Intrafirm | 403.00 | 1,393 | 1,620 | 4,362 | 14.80 | 13.20 |
| Interfirm | 247.00 | 501.00 | 583.00 | 1,055 | 8.20 | 7.70 |
| All developing countries | <u>162.00</u> | <u>426.00</u> | <u>473.00</u> | <u>972.00</u> | <u>11.30</u> | <u>8.30</u> |
| Intrafirm | 137.00 | 364.00 | 407.00 | 825.00 | 11.50 | 8.10 |
| Interfirm | 25.00 | 62.00 | 66.00 | 147.00 | 10.70 | 10.50 |
| Latin America | <u>116.00</u> | <u>287.00</u> | <u>311.00</u> | <u>404.00</u> | <u>10.60</u> | <u>3.40</u> |
| Intrafirm | 96.00 | 245.00 | 264.00 | 323.00 | 11.00 | 3.40 |
| Interfirm | 20.00 | 42 | 47.00 | 81.00 | 8.60 | 7.0 |
| Non-Latin America developing countries | <u>46</u> | <u>139</u> | <u>162</u> | <u>568</u> | <u>13.1</u> | <u>17.0</u> |
| Intrafirm | 41.00 | 119.00 | 143.00 | 502.00 | 12.60 | 17.00 |
| Interfirm | 5.00 | 20.00 | 19.00 | 66.00 | 16.60 | 16.80 |

Source: UNCTAD, 1980, TD/B/C.6/55. p.21, Table:6

* : Excluding film and TV tape rentals.

Export Clauses:

Restrictive clauses on exports from the subsidiary which implicitly implies a considerable loss of "potential" foreign exchange earnings are frequently observed in the transactions of MNEs in developing countries, especially in import-substituting economies. "Export restrictions may take the following forms, among others:

- (a) Direct restrictions
 - (i) Global bans on exports;
 - (ii) Exports prohibited to specified countries;
 - (iii) Exports permitted to specified countries only;
 - (iv) Exports restricted to specified products;
 - (v) Export quotas.

- (b) Indirect restrictions
 - (i) Prior approval of exports;
 - (ii) Primary responsibility for the domestic markets;
 - (iii) Price control on exports;
 - Higher royalties;
 - Predetermined price levels;
 - (iv) Quality requirements;
 - (v) Exports permitted only through specified forms;
 - (vi) Restraints on export promotion." {80:p.53}

An extensive study of 451 technological contracts in the Andean Pact showed that 409, or 90 percent, contained some form of clause on exports. In Bolivia, 27 of 35 contracts with export clause, or 77 percent, prohibited exports totally, while 2, or only 5 percent, permitted exports to specified countries, only. (See Table:III-22) The distribution of contracts containing some form of "restrictive" clause was as follows:

| | |
|----------|------------|
| Bolivia | 82 percent |
| Colombia | 78 percent |
| Peru | 98 percent |

In Chile, 117 out of 162 contracts, or 72 percent, banned exports totally and the majority of remaining 45 contracts contained some form of restriction on

exports. {85:p.55} Hence, including the contracts in Chile, 317 out of 409, or 77 percent, of contracts evaluated in the Andean Pact, prohibited exports totally. Excluding Chile, 86 percent of the contracts contained restrictive clauses. According to a UNCTAD report referring to data supplied by CORFO and CONICYT, 1971, as many as 158 out of 175 contractual arrangements in Chile, or 90 percent, contained explicit export restricting clauses, while 17 supplied no information. {68:p.16, Table:7}

Table: III-22 Contracts With Export Clause in Selected Latin American Countries

| Country | Total number of contracts | Total on of | prohibi- exports | Exports only in are | permitted certain as | Exports to rest | permitted of world |
|----------|---------------------------|-------------|------------------|---------------------|----------------------|-----------------|--------------------|
| | | | %* | | %* | | %* |
| Bolivia | 35.00 | 27.00 | 77.00 | 2.00 | 5.00 | 6.00 | 17.00 |
| Colombia | 117.00 | 90.00 | 77.00 | 2.00 | 1.00 | 25.00 | 21.00 |
| Ecuador | 12.00 | 9.00 | 75.00 | - | - | 3.00 | 25.00 |
| Peru | 83.00 | 74.00 | 89.00 | 8.00 | 9.00 | 1.00 | 1.00 |
| Total | 247.00 | 200.00 | 81.00 | 12.00 | 5.00 | 35.00 | 14.00 |

Source: V.C. Vaitos, 1974, *Intercountry Income Distribution and Transnational Enterprises*. p.54

* : Percentages added by H. Gurak.

"In terms of sectoral comparisons the following figures were noted in the Andean countries with respect to the number of contracts that included some form of export restriction (complete or partial) as a percentage of the total contracts with relevant information:

| | |
|--------------------|---------------------|
| Textiles | 88 % |
| Pharmaceuticals | 89 % |
| Chemicals | 78 % |
| Food and beverages | 73 % |
| Others | 91 %" {85:pp.56-57} |

In terms of ownership structure of the enterprises concerning 451 contracts evaluated, 79 percent of the foreign wholly-owned subsidiaries and 92 percent of the nationally owned enterprises were subject to some form of restriction on exports. {85:p.57} The lower percentage for the foreign wholly-owned subsidiaries can be accounted for the fact that the parent-subsidiary relations render explicit written agreements superfluous.

Empirical evidence on Turkey indicates somewhat less drastic results than in Andean countries. Of the agreements evaluated during the two-plan periods, 1969-1972 and 1972-1977, in conjunction with technology transfer transactions, 62 percent in machinery sector, 37 percent in chemical sector, 67 percent in electrical sector and 46 percent in other sectors contained restrictive clauses on exports. (See Table:III-23)

Table: III-23 Contracts Containing Export Clauses In Turkey.
1968-1977

Percentage distribution of clauses (%)

| Sector | Subject to (*) | | |
|------------|------------------------|----------------------|-------------------|
| | <u>No restrictions</u> | <u>authorization</u> | <u>Restricted</u> |
| Machinery | 35 | 56 | 6 |
| Chemical | 63 | 37 | - |
| Electrical | 33 | 54 | 13 |
| Others | 54 | 43 | 3 |

Source: 4th Five-year Development Plan, DPT, p.50, Table:40

* : Technology supplying part does not permit exports to home country and to countries acquiring the same technology, or authorizes permission after approval.

Other Restrictive Clauses:

Intra-firm loans:

High interest payments on intra-firm loans represent another form of clandestine transfer of resources (foreign exchange) flowing from the subsidiary to the parent firm. "Data on Chile indicated that while the total foreign direct investment registered in that country between 1964 and 1968, originating from the U.S.A., West Germany, Switzerland, and the U.K., amounted to about U.S. dollar 62,800,000, the total volume of foreign private loans coming from the same countries was about U.S. \$ 174,871,000. No exact estimate was provided of the percentage of these private loans utilized by foreign firms." {85:p.83} But interest rate on these loans are assumed to be used, to some extent at least, to escape high corporate tax rates at around 67 percent, and the remission tax at 45.2 percent, in order to transfer more returns to the parent enterprise. {85:p.84}

Duration of contracts:

Technology supplier is always keen on the further use of its productive technical knowledge after the expiration of contractual agreements, thus enabling the parent firm to exercise wide-spread control over the subsidiary. The longest duration period possible would be the most desirable solution from the point of view of technology supplier. But the interests of the host country point to the opposite direction, i.e., the shortest possible duration. Otherwise, the absorption efforts of the imported technology through backward and forward linkages might be wasted or delayed on the grounds of industrial secrecy mechanism to the detriment of host countries. Hence, it is in the best interests of developing countries to shorten the duration of contractual agreements, while the opposite is true for MNEs and their home countries.

Renegotiations on the duration of contracts in Latin America seem to have accomplished substantial changes in favor of the host nations. For example, 48 out of 100 agreements evaluated in the pharmaceutical sector in Venezuela were valid for an undetermined period and 15 of them had duration over 10 years. In Peru, 78 out of 103 technological agreements contained no specified provision on duration. According to a study by ININTEC 80 percent of 404 agreements evaluated had a duration of more than 5 years, and 66 percent more than 10 years. The percentage of agreements containing no specified duration was 39 percent. The authorities have been systematically attempting to reduce the duration of agreements. "As a result of policies applied, the average duration of agreements processed by competent authorities has

changed radically in comparison with the situation existing before..... In Colombia the validity of 101 agreements in force in 1977 was:

1 - 3 years 63 agreements
 3 - 5 years 27 agreements
 more than 5 years 11 agreements" {76:p.34}

In Turkey, technological agreements signed during the second and third five-year development plans, 1968-1977, exhibited relatively long duration. (see Table:III-24) Percentage distribution of the duration of agreements shows that 7 percent in the machinery sector, 14 percent the in chemical sector, and 16 percent in the electrical sector had duration 3 or less years.

Table: III-24 Percentage Distribution Of Contracts Classified By Years

| <u>Sectors</u> | <u>Years</u> | | | | |
|----------------|--------------|-----------|----------|----------|----------|
| | <u>15+</u> | <u>10</u> | <u>5</u> | <u>3</u> | <u>2</u> |
| Machinery | 1 % | 32 % | 60 % | 6 % | 1 % |
| Chemical | 9 | 23 | 54 | 12 | 2 |
| Electrical | - | 18 | 66 | 11 | 5 |
| Others | 2 | 16 | 78 | 3 | 1 |

 Source: Fourth Five-Year Development Plan, DPT (SPO) p.50, Table:40

Tied-inputs:

Percentage distribution of tie-in clauses on inputs for 6 developing countries in Table: III-25 demonstrates a greater tendency for tying of inputs in Latin America in comparison to India and the Philippines. Bolivia ranking the top of the list declared that 83 percent of the contractual agreements signed in that country had such provisions, in contrast to only 5 percent for India between 1964 and 1969.

Table: III-25 Provisions for Tied Inputs in Contractual Agreements for the Transfer of Technology
 Percentage of agreements containing such provisions

Country

| | |
|------------------------------|----------|
| Bolivia | 83 |
| Colombia | 77 |
| Ecuador | 67 |
| Peru | 62 |
| Philippines | 26 |
| India: April 1961-March 1964 | 15 |
| <u>April 1964-March 1969</u> | <u>5</u> |

Source: F. Stewart, 1979, International Technology Transfer
{63.p.33,Table:5}

In Chile, 24 percent of the agreements had tied the imports to purchase from the parent firm and/or from the sources determined by the parent. {68:p.16, Table:7} The reader should be warned to bear in mind that in the case of wholly-owned subsidiaries, there is no need to specify such restrictions because of the fact that the guidelines of operations of a wholly-owned subsidiary are determined by the parent firm.

Volume of output:

The restrictive clause on the volume of production (output) would aim to predetermine the minimum and/or maximum quantities to be produced by the subsidiary. Such restrictions might serve to maintain the (domestic/international) prices at a desired level or to preempt the possibility of exports from the subsidiary. Such provisions strictly aim to maximize the global profits of the MNE in spite of the claims to stabilize international price level and disregard the host country interests.

Non-competition clause:

The main purpose of such clauses is to eliminate the possibility of the subsidiary by entering international markets for the same commodities as parent firms. Furthermore, the parent may prohibit the subsidiary to import competing commodities or production processes or cooperation of any kind with third parties. Non-competition clauses are not only detriments to development but also against the basic virtues and principles of liberal economic theories.

Grant-back clause:

These clauses require that any improvement made locally by the subsidiary is to be reverted back to the owner of technology, the MNE. CORFO and CONICYT (1971) study showed that 57 of 175 contractual agreements evaluated, or 32 percent, contained a grant-back clause to the technology supplier. {68:p.16, Table:7} These clauses deprive the host country of the potential benefits of improvements, while consolidating the position of parent firm in technical productive knowledge.

CHAPTER: IV Summary of the Findings and Some Policy Proposals

As we have studied in the previous chapters, contractual restrictive practices have been frequently used to control the quality, quantity, prices, exports, sources of imports, interest rate on loans, etc. Major consequent negative impacts of such practices can be summarized as follows:

- 1- Diffusion of transferred technological/managerial knowledge and skills is far from satisfactory (inadequate linkage effects);
- 2- Key decisions affecting the nature of transactions of the subsidiary and/or the interests of host country are often taken by foreigners;
- 3- Excessive foreign exchange costs as a result of transfer - pricing mechanism and interest rate on intra-firm loans;
- 4- Tax revenue losses arising from tax-incentives and undeclared profits (transfer pricing);
- 5- Foreign exchange costs due to restrictive export clauses;
- 6- Economic/political dependence and vulnerability on external events;
- 7- Technological dependence perpetuated by market imperfections due to heavy reliance on foreign technology;
- 8- Pollution arising from the lack of effective protective measures and personnel to preserve the environment.

Any attempt to assess the costs and benefits of technology transfer through the foreign direct investments of MNEs based on the premises of pure market values is bound to produce misleading results. Because the socioeconomic priorities and development goals set by developing country decision-makers could differ substantially from the private priorities of commercial enterprises. To put it differently, the social values of importance are not always in line with the private values and targets of business firms. For example, "whilst it may be quite beneficial for the local enterprise to rely on foreign technology suppliers in the short run, this dependence may not be

desirable from a social point of view and is often detrimental to the development of the country in the long run. From a social point of view it might be preferable to use local technical capabilities even if they are limited and inefficient in the short run, because in the long run they will become more efficient and make it possible to diminish reliance on external sources of technical skill and to generate a more appropriate technology." {67:p.7} The principal means to reach this target could be either instructive through legislation or suggestive through various market incentives under the guidance of authorities, or a combination of both.

To conclude, the major findings of the study of technology transfer to the developing areas through direct investments of MNEs can be summarized as follows:

- 1- When foreign investor newly forms a plant, its contribution to domestic capital formation and employment generation is positive. In case of market entry through acquisition, as in about 30 percent of all FDIs, there will be no, or limited contribution to capital formation and job creation;
- 2- Foreign investment improves the foreign exchange reserves of host country at the initial stage. But what is taken out of the country after some years in terms of royalties and profits (official and clandestine) tend to exceed the initial inflows by a good margin. Transfer-pricing mechanism seems to be the principal source of clandestine profits (foreign exchange costs).
- 3- An important aspect of the imported new technology is the introduction of new commodities and increased (potential) competition. But as the commodities are designed and developed in industrial countries reflecting their tastes and high purchase power, they often are "inappropriate" or luxury goods for developing countries afforded only by a small minority of population. In other words, such products create socially undesirable consumption patterns.
- 4- Another important aspect of the transferred advanced technology is "how" the commodities are produced, i.e., methods of production. Foreign technology is a typical expression of the development stage of industrialized nations. Accordingly, their production methods reflect the relative scarcities of production factors. And as we know, in LDCs there is relatively scarce capital and abundant man- power. As a result, the

transferred production methods usually tend to be inappropriate with respect to factor endowments.

- 5- If the foreign subsidiary is established to service only the foreign markets; there is the risk of "non-transfer" of technology to host country. In case of production for both foreign and local markets the technological productive knowledge transferred is likely to be rather limited because the technology supplier would be reluctant to provide access to key knowledge to prevent potential competition in its markets or be indifferent to the attempts aimed to improve host country's technical capability which could undermine the foreign investors' bargaining strength. In other words, the more the host country learns, the more disadvantageous it would be for the technology supplier.
- 6- Tax-concessions deprive the developing host countries of vital revenues for the state which could be utilized to promote the indigenous facilities. "Empirical findings" says B. Knall "reveal that tax concessions were a relatively minor consideration in the decision to invest in LDCs." {40: p.82} Regarding Knall's argument and the revenue loss of state, it is, perhaps, in the interest of developing nations to eliminate such concessions and to discourage all investments undertaken for tax purposes only. But, in reality, unfortunately, developing nations seem to compete 2- with each other to provide more generous tax-incentives.
- 7- Economic/political and technological dependence has been one of the most delicate issues concerning direct investments. In spite of its all contributions to national economy, the subsidiary is in the final stage subject to the interests of parent firm and eventually of home country. The home country can use the subsidiaries as proxy to promote her national interests, and examples of this are not few (see Chapter-III-4) In addition, the MNEs with their enormous economic facilities sometimes greater than many developing countries, can exercise economic and political pressure like a nation-state in crises/conflicts with the host country. The trend and nature of international economic transactions tend to perpetuate the technological and economic dependence on MNEs consequently on their home countries.
- 8- Restrictive practices, whether implicit or explicit, constitute major impediments to development. These practices range from the prohibition of exports to tying the imports to a source determined by the foreign investor or quality / quantity restrictions. In some cases, it prevents the host country from the full-scale utilization of subsidiary in

accordance with social values and priorities. Restrictive practices tend to favor strictly the foreign investors' interests.

Some Policy Proposals

Supervising Agency:

Given the specific nature of transactions in technology transfer through FDIs and the urgent need of developing countries for accelerated economic growth, one of the objectives of developing countries should be to set up competent government agencies responsible, in accordance with economic policy and indigenous endowments, for the evaluation and guidance of foreign investment and related technological transactions. Such an agency must be capable of evaluation and ranking of various technological alternatives available with due regard to domestic circumstances and long run economic targets.

In Colombia where the *Comite de Regalies* was established with the purpose to regulate / investigate royalty transactions, the contributions of the agency were tremendous. From 1967 to June 1971 395 contracts on technology transactions were evaluated. "Of these, 334 were negotiated, modified, and finally approved and 61 were rejected. In the process of negotiations, payments of royalties were reduced by about 40 percent or about U.S. \$ 8,000,000 for 1970. This annual royalty reduction through government negotiation was equivalent to the total explicit annual payments for technology reported for the whole economy of Colombia.

In addition, during the latter part of 1970 and the beginning of 1971 negotiations by the Colombian *Comité de Regalias*:

- 1- Reduced by 90 percent the tie-in clauses in the purchase of intermediaries;
 - 2- Eliminated by 100 percent the restrictive export clauses;
 - 3- Reduced by 80 percent clauses on minimum royalty payments;
 - 4- Prohibited payments on taxes by the licensee on royalties remitted to the licensor;
 - 5- Established maximum percentage royalty rates by sectors."
- {85:p.129}

Agencies with similar purposes could be set up in all developing countries and must be granted authority to act independently but in accordance with national policy objectives. An international code of conduct to which all host and home countries as well as MNEs are subordinated, could eliminate/relieve various problems and market imperfections such as tax-incentives and clandestine foreign exchange transfers. Whilst the International Code of Conduct defines the general framework of technology related matters, the national agency could see to it that globally accepted guidelines are not violated in the national market. [U.N. introduced a draft Int. Code of Conduct in 1983 {83:}]

Creation and promotion of such agencies and the application of a globally accepted International Code of Conduct is not expected to occur painless. The challenge of the status quo of transactions is bound to produce resistance and counter-actions. The Colombian Comité de Regalías could not escape such counter-actions and confrontations either. There seemed to be three basic problems facing the Comité de Regalías. "The first refers to the potential corruption of government officials..... A second basic problem of the Comité de Regalías was that of confronting each foreign supplier of a particular technology more or less as a monopolist..

The third shortcoming of the committee, during its first three years of negotiations, was its predominant orientation towards balance of payments issues and, as its name indicates, that only with respect to royalties." {85:pp.130-131 }

Inspired by the impressive achievements of Colombian Comité de Regalías, several other countries took steps in the same direction to curb the royalty payments to the parent firm. For instance, "Mexico's 1973 Law on the Transfer of Technology required foreign investors to rewrite 5,000 existing contracts and pare royalties on 1,500 new contracts from the 5-15 percent range to less than 3 percent in the majority of cases..... The Mexican commission that regulates transfer of technology, for example, approved royalties higher than 3 percent for products with high R & D costs, while holding retailers' fees for trademarks on brandnames (in cosmetics and food processing) to as little as 1 percent." {10:p.380} (see also Appendix-C). By harmonizing their approach and policies, the developing countries as a whole could minimize the costs and increase the benefits considerably.

Joint-investment:

Complete control of the subsidiary's business transactions and related decisions constitute various disadvantages for the national economy of host countries. After all, a wholly foreign owned subsidiary would primarily be subordinated to the interests of parent firm and eventually of home country on key matters. Without resorting to explicit written arrangements, the parent firm can exercise complete control on key decisions concerning price, quality, quantity, exports, imports, as well as the very existence of plant itself, all of which could be to the disadvantage of host country interests. In order to avoid such unpleasant incidences, the technology importing developing country might encourage joint-venture investments (as distinct from minority ownership of subsidiary) with minimum possible restrictive clauses, where all key decisions are taken collectively with the local share-holders. Given the "right" incentives and policies, preferably globally accepted ones, technology acquiring country may assure a continuous flow of advanced productive knowledge and see to its spill-over through backward-forward linkage effects. After all, joint-ventures do not only imply cost-sharing but also technical/managerial skill sharing between partners, and as such reduce, if not eliminate, the risk of foreign control and transfer pricing.

Indigenous capabilities:

It is in the interests of developing countries to encourage and support the indigenous research and development activities, improve the absorptive capacity of imported technology, and improve both quality and quantity of technical/managerial manpower. Initial costs of investments in these fields, e.g. in infrastructure and human-capital, may be rather high, but the country's potential benefits in the long run would be tremendous. If technology is the key to development, skilled manpower is the key to generation and successful application of technology. The importance of the investment in human skills can never be over-emphasized. But the brain-drain from developing countries constitutes a serious problem and has to be dealt with appropriate, effective measures.

License Arrangements:

A license arrangement permits the recipient to have access to certain productive knowledge developed by the technology supplier. It saves the costs of producing similar technology, thus freeing the scarce resources for

alternative uses. Therefore, license arrangements could be an effective alternative to the technology transfer through direct investment. Indeed, Japanese authorities have always been reluctant to permit foreign direct investment in the country (see Appendix-A). Yet, Japan has been quite successful in acquisition and adaptation of imported technology through license arrangements. Commodities which were imitated once, have paved the path for contemporary advanced and competitive technologies.

Developing countries could attempt to achieve similar results by following the footsteps of Japan, given the presence of appropriate incentives with respect to indigenous resources. One of the key factors of Japanese success was the technical absorptive capacity of the country and the available skilled manpower. Another important factor was the relatively narrower technological gap between Japan and the industrialized countries with advanced technology. The success of Japan was unique and it should not imply that all late-comers can be as successful by simply imitating Japanese experience.

Licensing arrangement implies no continuity in the supply of technology. Therefore, the technology importing nation must be able to make the best use of it within a limited time-span, i.e., adapt to local conditions and further develop it. In the absence of successful adaptation and further development, the imported technology would become outmoded after some time, while others advance new technologies. Thus, the absorptive capacity of the recipient country plays a vital role in the successful transfer of technology through license arrangements.

Tax policy:

Various forms of tax-incentives are offered by the developing countries to attract more foreign investment. Tax-holidays for the initial 5 years followed by reduced tax rates in the successive years are quite common concessions. The foregone tax revenues represent considerable losses for the state. If they were fully collected and utilized through proper channels, the national economy could gain substantial benefits. Instead of competing to offer more generous tax-concessions, the developing countries should discourage investments for tax-purposes only, and introduce an International Code of Conduct for Taxation for all countries. Such a Code of Conduct would serve the interests of not only the developing countries but also of developed countries.

International Agency:

Many developing countries lack the facilities, both physical and human, and are in need of guidance and assistance on technical matters. Therefore, an international non-profit oriented agency can be set up to assist the developing countries in evaluation and ranking of foreign technologies available, to train technical / managerial manpower, to improve the technical infrastructure, to provide technical/managerial assistance when requested, to negotiate/bargain with the MNEs on the side of developing countries.

In fact, the United Nation's Advisory Service has been providing such assistance to establish National Centers (for example in Ethiopia, Venezuela) or Regional and Subregional Centers (Asian region, African Region, Western Asian Region, Latin American Region, Central American Region and Andean Pact Region) for the transfer and development of technology. The Advisory Service is to provide appropriate assistance in "the formulation and implementation of technology plans, including technology policies and plans concerning specific sector of critical importance to these countries.... the establishment and strengthening of institutional infrastructures, including technology centers and other arrangements at the national, subregional, regional and sectoral levels, so that their linkages with the productive sectors can be improved and the needs of technology users met through the provision of services, training and advice in the productive utilization of technology." {73:p.5}

In order to increase the efficiency of the Advisory Services, governments should submit all technology related agreements and data to the disposal of agency. In addition, the Advisory Service could assist the developing countries to renegotiate the terms of old agreements.

Additional Proposals as Headlines

Other relevant proposals aimed to improve the benefits or reduce the costs accruing to developing nations can be summarized as follows:

- 1- To promote higher degree of local participation in management and in all key-decisions concerning the operations of subsidiary.
- 2- To outlaw all kinds of restrictive practices, including the transfer-pricing, and introduce severe economic penalties for firms not complying with the legislation, preferably at international level.

- 3- To restrict the activities of foreign owned subsidiaries to the fields compatible with national values and objectives. A chewing-gum plant, for example, has no contribution to make in technological matters.
- 4- To separate the production from distribution and other trade activities. As a result, while the foreign investor engages in the production process, indigenous firms should acquire the exclusive rights of domestic and foreign trade. This would eliminate/minimize the risks of transfer-pricing and restrictive practices.
- 5- To provide incentives to make better use of local endowments (human and capital).
- 6- To encourage/enforce the foreign investors to increase the use of locally produced components through subcontracting, and to promote the forward- and backward-linkage effects of imported technology.
- 7- To establish domestic research and development centers of indigenous technology.
- 8- To pursue a stable and persistent "appropriate" economic policy with long term objectives, avoiding excessive trade barriers.
- 9- To discourage foreign entry by take-over of already operating plants, unless a new production method is introduced.
- 10- To encourage the creation of common markets among countries at similar development stages with preferential treatment in trade, and technological co-operation.
- 11- To make public all technology related arrangements, incentives and data to facilitate sound comparative studies.
- 12- To encourage the import of (semi-) manufactured commodities in developed areas originating from developing countries.
- 13- To limit the proprietary rights of patents to, say maximum 5 years by international law. The greatest benefactor of such a change would be the developing countries because the industrialized countries already have the technological and financial facilities to develop/imitate the new technologies in a relatively shorter time-span.
- 14- To encourage the local production in the developing host countries of one or more "international" products to service the global markets in order to exploit scale-advantages to utmost limit and thus to reduce average production costs.

APPENDIX (A)

Japanese government's guidelines for the foreign investors; *

- 1- Seek co-existence and prosperity with Japanese enterprises through joint-ventures on an equal partnership basis.
- 2- Avoid concentration of investment in specific industries.
- 3- Avoid suppressing small enterprises when entering into industries characterized by small firms.
- 4- Co-operate voluntarily with the Japanese effort to maintain proper industrial order.
- 5- Avoid entering into unduly restrictive arrangements with parent companies abroad, and do not resort to unreasonable restrictions concerning transactions or to unfair competition.
- 6- Take positive steps toward developing Japanese technology, and do not hamper the efforts of Japanese industries to develop their own technology.
- 7- Contribute to the improvement of the nation's balance-of-payments through exports and other means.
- 8- Appoint Japanese to the board of directors and top-management positions and make shares of company stock available to the public.
- 9- Avoid closures of plants, or mass dismissal, and unnecessary confusion in employment and wage practices by paying due regard to the prevailing Japanese practices.
- 10- Conform to the government economic policy.

* Foreign Investment Council's recommendations to the Finance Minister on June 2, 1967, approved on June 6, 1967.

APENDIX (B)

Typical contract clauses in Andean countries: *

- 1-Tie-in Clause for Intermediate Product Purchases: `For the elaboration of ... product, covered by article No:... in the contracts, the licensee is required to purchase all necessary products, [raw materials and intermediate products], as recommended by the licensor, from the source that the licensor indicates.'

- 2- Tie-in clause for machinery purchases: `The installation and any eventual modification or amplification of the licensee's plant will be subject to the approval of the licensor; ...such purchases for [machinery] will be subject to the licensor's consent.'

- 3- Export restrictive clause: `.... the licensee is not permitted to export ... products as covered by article.... of the contract.'

- 4- Tie-in clause on personnel: `Article ... obliges the licensee to fabricate the products [covered by the contract] only under the direction of a ... [professional] selected and trained by the licensor. In addition, article ... stipulates that the Director of Marketing will be a person trained by the licensor and designated in common accord..... The remuneration for this professional will be covered by the licensee.'

- 5- Sale or resale clause: `In accordance with article of the contract the resale of intermediate products or the sale of products to be produced by the licensee, will be submitted to the prior agreement of the licensor; ... article ... stipulates that the prices of sales to the public, will be "fixed" in common agreement by the two contracting parties...'

* {85:pp.42-43}

APPENDIX (C)

Mexican Law on Technology Transfer

In Mexico the legislation prohibits technology agreements as follows: *

- 1- When the purpose is to transfer technology already freely available in the country (objectives: cost and protection of local technology);
- 2- When the price is unjustified (cost);
- 3- When provisions are included which permit the supplier to regulate or intervene in the administration of the transferee (independence);
- 4- When there is an obligation to assign to the supplier of the technology the patents, trade marks, innovations or improvements received by the transferee (learning and independence);
- 5- When limitations are imposed on technological research or development (learning and independence);
- 6- When there is an obligation to acquire inputs from any given source (costs and independence);
- 7- when exports are prohibited against the best interests of the country (costs and independence);
- 8- When the use of complementary technologies is prohibited (costs, independence and learning);
- 9- When there is an obligation to sell exclusively to the supplier of the technology (costs and independence);
- 10- When the transferee is required to use permanently, personnel, designated by the supplier (independence, learning and costs);
- 11- When the volume of production is limited, or sale or resale prices imposed (independence and costs);
- 12- When the transferee is required to appoint the supplier as exclusive sales agent in Mexico (independence and costs);
- 13- When the unreasonable terms of duration are established (costs and learning);
- 14- When the parties shall submit to foreign courts for decisions in interpreting contracts (national independence).

* {63:pp.58-59}

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