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COUNTRY CASE STUDY SUBMITTED BY HUNGARY*

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INTERRELATIONSHIP

BETWEEN

INVESTMENT AND TECHNOLOGY TRANSFER

Presented by
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C O N T E N T S

1 GENERAL INFORMATION ON ECONOMY

1.1 Geographical Features, Hungary In the World Economy

Hungary is a Central European country lying between the 45° 45' and 48° 35' northern latitude and between the 16° 5' and 22° 55' eastern longitude. Bordered by Austria, Slovakia, the Ukraine, Romania, Serbia, Croatia, Slovenia, her area is 93,000 square kilometres (33,000 square miles). Her population is 10.36 million of which more than 2 million live in the capital, Budapest. The other big cities have significantly less inhabitants. These are as follows: Debrecen, Miskolc, Szeged, Pécs, Győr. The population density is 113.8 persons/square kilometre, and this figure is placing her in the middle of the relevant list in Europe. Hungarians account for 96.6 per cent of the country's population, with the rest being German, Slovak, Serbian, Croat, Romanian, etc. Some 5 million Hungarians live beyond the country's border, the overwhelming majority in the neighbouring lands. Life expectancy for men is 66 years and for women 74 years. 7 per cent of the adult population is graduated.

Two thirds of Hungary's territory constitute plain land lying lower than 200 metres above sea level. The rest is rolling country between 200 and 400 metres above sea level. The area higher than that counts only 2000 square kilometres and there is only one mountain named Kékes which exceeds the 1000 metre mark. The Danube, the Tisza and the Rába are her most significant rivers. Her largest lake is Lake Balaton with a surface area of 598 square kilometres, Lake Fertő is second but Hungary owns only 82 square kilometres of the 322 square kilometre lake. The third lake that is worth mentioning is Lake Velence with a surface of 26 square kilometres. The land is very rich in medical springs and its climate is basically continental. As the country is in the Carpathian Basin, the impacts of the weather fronts are softened and its climatic conditions are favourable for agricultural activity, which is well proven by the fact that 70 per cent of the areas has been brought under cultivation.

Hungary is poor in natural resources and their exploitation is far from being satisfactory, there are still substantial reserves, especially of the hot springs and thermal waters. The bauxite and natural gas deposits are also substantial. However, the nation's real resources lie in the people, their knowledge, skills, resourcefulness and creativity, potentials that have been relatively under-exploited.

The weight of the country in the world economy is small and her position in the globe is fundamentally influenced not only by her level of development but by her dimensions. Her population, industrial output and foreign trade turnover do not reach 1 per cent of those data of the world as a whole.

Hungary has been the member of the United Nations Organization since December, 1955. She joined GATT as a full member in 1973. Besides, the country is member of several other specialized institutions and organizations of the UN. Acquiring membership in the International Monetary Fund and in the World Bank in 1982 was a major step forward.

Hungary is member of the Council of Europe and is associated member of the European Community as well. She, however, did not join any military associations.

As of October 23, 1989 Hungary has become a republic again, and this change was closely connected with the political and social transition of 1989–90 in the course of which the country changed over to a bourgeois-democratic establishment.

1.2 Political Situation and Economic Policy

The top event of the political, social and economic reform process in Hungary was the first free election — after 40 years — in April 1990.

The main objective of the Hungarian economic policy, in line with the political and economic change of the regime, has been the creation of market economy system.

The coalition government, formed following the 1990 free election, has set the targets of full change of the economic system, thorough reform of ownership and achieving domination of the private spheres. It wishes to fulfil these targets by supporting entrepreneurship and privatization in a wide circle, in which — perhaps needless to say — an outstanding role is to be given to the involvement of foreign working capital.

For the sake of the formation of a social market economy system the role of state is diminishing, the ownership structure is modifying and, at the same time, the significance of foreign capital involvement is increasing. The primary function of the state is to encourage efficient economic decision-making and to provide the living conditions for every one of the citizens. Its economic role is focussed on crises handling.

There is a social and economic interest in the establishment of a widerange middle strata of private proprietors and private employees.

Recently, three international agreements have been signed by the Hungarian government each of which has outstanding importance in and great influence on the economic policy:

— Association Agreement between Hungary and the European Community
(It was signed in March 1992)
— Free Trade Agreement with the EFTA countries
(Signed on 29 March 1993)
— Central-European Free Trade Agreement
(Signed by Hungary, Poland and the former Czech and Slovak Republic on 21 December 1992)
This agreement is applied from 1st March 1993 and contains the establishment of a free-trade zone as a result of the gradual elimination of factors hampering economic ties.

Economic Structure

The Hungarian economy is in the stage of a gradual transformation; its output has decreased — compared with earlier years. The gross domestic product (GDP) has been decreasing ever since 1989: in 1991 it was more than 11% lower then in the previous year; in 1992 this drop amounted to a mere 5% and in 1993 the previous year's level will be maintained.
The total value of the gross domestic product amounted to 2800 billion forints in 1992. The volume of domestic utilization fell by 7–8%, within this figure the population's consumption showed a considerable decrease in 1991 — 5.6% per annum — which, however, slowed down to 2.5% by 1992. The communal consumption decreased by 3–4% in each year. Accumulation registered a drop of 11% in 1991 and 7.5% in 1992.

Investments absorbed 536 billion forints in 1992, equalling a decline of 8% in volume. Retail trade turnover scored a 15% growth if counted at current prices, while its volume fell back 5.6% in 1992.

Inflation slowed in 1992. After having increased by 35% in 1991, the consumer price index grew by 23% only in 1992. In January, the consumer prices suddenly soared by 6.8 percent, owing, primarily, to government measures (such as the introduction of two-tier VAT, increased consumption tax, rise of certain public service prices etc.)

The economic performance was also dampened by the fact that the solvent domestic demand did not grow. The number of registered unemployed persons totalled 663,000 by the end of 1992. The polarisation of incomes continued. The number of pensioners grew by 118,000 and the average amount of pensions rose slower than the consumer price index.

In foreign trade the import surplus dropped from HUF 91 billion in 1991 to HUF 34.5 billion in 1992. Germany had become our most important trading partner, followed by the Soviet Union's successor-states and Austria. The number of foreigners arriving in Hungary topped in 1990 with 37.6 million persons; subsequent figures: 1991 — 33.3, 1992 — 33.5 million. Tourists numbered 20.5 million in 1990, 21.9 million in 1991, 20.2 million in 1992. Despite the sinking number, in 1992 a 600 million dollar income surplus accrued from tourism.

In 1991 the transformation of the ownership-structure had accelerated. In 40% of the state-owned enterprises the transformation into business companies had either been completed or begun; the small-ventures sector made huge steps forward. The new economic entities are mostly small-size, dynamic economic units — most of them limited liability companies.

The mood of venture-formation did not abate in 1992 either; the number of business ventures possessing a separate legal entity has grown to 69,325. The breakdown of the firms according to their principal lines is as follows; more than one-third of them is engaged in commercial activity as well as repair of vehicles and sale of consumer durables. One-fifth pursues industrial activities and a similar proportion engages in real-estate conveyancing, leasing etc.

Following the enactment of the Bankruptcy Law in 1992, some 2300 corporate business firms filed bankruptcy pleas; one-third of them had been operating in the manufacturing industry, and one-fourth in trade.

The influx of foreign capital continued over 1992. The total of ventures with foreign equity exceeded 13,000 by the end of the year. More than half of the new joint ventures is engaged in trading — these are responsible for 11% of the foreign invested capital. On the other hand, about 670 ventures operating in the processing/manufacturing sector owns 62% of the foreign capital.

The FDI inflow in 1993 reached 7.2 billion USD and the number of joint ventures approached 18.ooo in Hungary.
At the end of this year Hungary was among the 2o most successful capital importeur country in the world, though more than 90% of all the invested capital found their placement in the OECD countries.

1. OBJECTIVES AND MAJOR GUIDELINES OF THE INNOVATION POLICY

The objective of the innovation policy is the continuous renewal to facilitate the construction of a modern market economy for the permanent improvement of human life and living standards through its competitiveness and international integration, based on the increase of scientific values and the standards of research, the transfer and improvement of knowledge, the modernization of the higher levels of education, the selection of development trends of research based on comparative benefits, the improvement of the efficiency of R&D focused on application, the establishment of an innovation-friendly economic environment, and the utilization of the results of research and development in a sensitive, market oriented way.

The innovation policy spreads over such areas whose scale of values and whose mechanisms of operation are different but they create an interrelated process to serve the interests of the national economy. Throughout the world, the innovation process is more and more considered as a complex entity /Annex No.1/. The sequence and interaction of elements /basic research, applied research, technological and product development, marketing, manufacturing/ that used to have a relative independence earlier can be observed increasingly. In view this the tasks of stimulating the evolution and renewal processes of these areas will be dealt with in the framework of a comprehensive innovation policy.

Both the international economic environment /recognition of a higher added value by the world market/ and our domestic potentials /scarce energy and raw material resources, intellectual capacities with a relatively significant tradition/ justify that our innovation policy should be built on the intensive development of erudition. And this/definitively increases the value of education, research and intellectual activities in society.

The improvement of capabilities should be put in the focus of innovation activities, the capability of accepting, adopting and utilizing knowledge and technology by adding value to them in addition to the establishment of the same.

Amidst the competition on the world market the primary task is to explore and improve comparative benefits. It can be stated on the basis of international trends that **one significant comparative benefit for Hungary in the long run lies in its advanced intellectual capacities.** This is the area that is more developed than the technical standards of its economy, and thus it is one that is earlier able to play an active role in European and international cooperation, even immediately.

The size of Hungary and its geographic location make us interested in very strong integration in both political and economic terms alike. In the field of R&D and innovation the intensity of globalization has increased in the past decades, this fact and our overall ambitions for an external political and economic orientation call for intensive development of the system of international relations in the R&D sector in Hungary. This is one of the strongly marked guides of action of the innovation

policy that, on the one hand, provides models and the possibility of analysis through international experience /both positive and negative/ and, on the other hand, can significantly improve the domestic basis of science and the innovation skills through cooperation.

The change of structures and our adaptation to the conditions of the world economy necessitate the strengthening of the strategic dimension. In motivating and supporting innovation, both the approach of "building the house from the bottom upwards", and that of "constructing from the roof downwards" have to be applied, subordinated to a /carefully elaborated/ development strategy. The strengthening of the strategic dimension requires from us, too, the identification of development tracks and junction of special importance for the national economy, and the establishing of priorities. In order to concentrate our means and assets, a small number of priorities can and should be selected only, with support for their realization. Nevertheless, it must not mean an etatistic overweight and the aggressive intervention of the state in the innovation processes.

The switch-over to a new track of development can be implemented through the joining of spontaneous market processes and the deliberate involvement of the Government to amplify each other. It should be ensured that the consensus among public institutions, new entrepreneurs, owners, independent specialists and the business federations in the renewal of the strategy and the institutional system will be based on the recognition of common interests.
The foundation of a market economy, the restructuring process, the debt management, and the budget deficiency on the one hand, and the rearrangement and renewal of R&D and higher education on the other hand create an environment of decision-making where conflicting situations are bound to almost every issue.

2. THE SYSTEM OF LINKS OF THE INNOVATION POLICY AND THEIR HARMONIZATION

2.1 Innovation priorities in socio-economic revival

The capability of innovation determines the dynamism of the national economy. The continuous renewal of the national economy through the self-regulating mechanisms of the market economy can be facilitated by a structured system of deliberate social and economic measures. Innovation policy is one of the significant elements of this process. Renewal is continuous and efficient if we manage to create harmony between the innovation policy and other policies to comprehend various areas of the national economy /economic policy, scientific policy, trade policy, etc./.

Knowledge and technology are the resources that are able to replace a considerable part of material, energy and labour inputs and, therefore, the economic importance of innovation is steadily growing. The objectives of the innovation policy must be enforced in close interaction with the objectives of economic development.

The priorities of innovation should be envisaged in agreement with the priorities of the economic evolution. In the natural evolution of economy, market forces and competition play a primary role but, due to the operative features, sophisticated interest components and motivations of transformation, and due to the considerable time difference between change and impact, the deliberate commitment of the Government in identifying and attaining consistent objectives cannot be replaced by anything else. The priorities of economic evolution mean the earmarking of areas selected on the basis of comparative benefits.

Moreover, the identification of milestones is inevitable on the basis of international experience, our potentials and market opportunities and of our intellectual capabilities, because the example of small countries successfully closing up /Finland, the "small tigers" in Asia/ shows that this is the way to make a break-through.

Linkage to areas treated as priorities internationally

- technologies to ensure the economical use of resources
- introduction and propagation of environment-friendly technologies
- development of bio-technological procedures
- dissemination of electronics and information technologies
- sciences of life

Utilization of the existing comparative benefits

- agrarian and food industry
- chemical industry

- infrastructure and information technology
- small- and medium-sized enterprises
- regional development policy
- quality issue and technical regulation

The working programme of the Government aimed at establishing the preconditions for stable economic growth wishes to accelerate privatization processes. Privatization, the involvement of foreign working capital and private capital promote the possibilities for the penetration and utilization of new technologies as well as for the dissemination of up-to-date methods of market penetration, plant organization and product management, on the one hand, and the reasonable use of the revenues of privatization serve the modernization of the economy and the improvement of competitiveness, on the other. The inflow of foreign working capital offers the chance of break-out, nevertheless, the development of the national economy must not depend on whether foreign investors are willing to invest money for a certain activity. In the course of privatization strategic principles are to be applied that:

- motivate foreign capital to intensify the development of the home industry, to excite competition but not to impropriate the Hungarian market;
- provide for the preservation of intellectual capital and R&D capacities, and their perspective use;
- continuously support the implementation of reorganization and innovation policy with special regard to trade policies;

Small and medium-sized enterprises emerging in the course of restructuring as dynamic factors play an important role in the transformation and evolution of the economy.

2.2 The importance of R&D in the innovation processes

In almost every phase of the innovation process, science has a promoting effect and generates new knowledge. The accomplishment of the innovation process is a function of overall cultural standards on the one hand, and innovation with its process renewing itself at higher and higher levels is the basis for the creation and dissemination of intellectual and cultural values, on the other. The front-rank of Hungarian scientific research is recognized all over the world as attractive, for generating moreover we possess a potential for generating contacts.

2.3 Development of human resources

The most dynamic and important factor of innovation processes is creative man with his modern knowledge and capabilities who, through the transfer and deepening of high-standard and up-to-date knowledge, through the elaboration and implementation of new recognitions and procedures, is the key figure of the innovation process.

Those institutions of higher education that have the right to award scientific degrees in their scientific areas should play an important role together with the research institutes in postgraduate and postdoctoral training.

The political and economic openness of the country has enabled us to build up various international scientific, economic /etc./ relations and to achieve through this the intensification of mobility and migration. Participation in study trips and meetings abroad as well as the periodic opportunities of being involved in research and development through

The most critical form of leaving one's career is brain drain. In this process, in addition to the "drain" aspect /to lure the labour force out of the country/, the whole of the Hungarians to leave their research base cannot be neglected either. The real loss is the final expatriation of scientists capable of creating scientific and educational bases, and that of senior experts, because this means a reduction of the intellectual capacity of the country not only for the time being but also in the long run. A positive factor in this process is that the contacts of Hungarian scientists and outstanding experts working abroad with their compatriots may be a source of potential benefit.

2.4 Dissemination of the products of R&D /diffusion, transfer of knowledge and technology/

The growing economic competition, the increasing intellectual contents of production, and the introduction of the most advanced technologies /high tech/ require the rapid economic utilization of scientific results and the shortening of time between the production of these results and their practical application. At the same time, social and economic problems manifest themselves in a more complex way, and their solution is only possible through the joint involvement of several disciplines including scientists and practical experts.

The dissemination /diffusion/ of technologies, methods, assets and equipment to improve human capabilities is an important prerequisite for the revival of the economy. For this reason, a bridge is to be built for the target-oriented connection of R&D and the business activities and ventures as well as capital investments.

In our economy, too, the channels of dissemination are to be developed through building up a network of diffusion-oriented institutions serving as bridges between organizations producing R&D results and the ventures capable of their economic application.

2.5 Regional Innovation Policy

The vertical management structure built up in the system of centralized economic management did not provide the framework and the possibility to enforce regional interests and initiatives, and did not establish mechanisms and institutional frameworks for their horizontal harmonization.

2.6 Development of international scientific and technological relations

One important area of the international integration processes is the R&D sphere. One of the "tools" in the success of our efforts to modernize and to get reintegrated in the world economy is the expansion and intensification of our scientific and technological relations /S&T/ with foreign partners. In this process, each individual and institutional figure in the country has to find his own partner "compatible" in organizational and functional terms. The goal is to strengthen the cooperation between researchers and developers and/or the promotion of know-how and technology transfer.

In the improvement of scientific and technological relations, the Government is basically active in two "territories":

Abroad, on the international scene, it constructs and strengthens our relations with the governmental organizations of foreign countries responsible for R&D and/or with the governing bodies of intergovernmental R&D organizations/programmes, i.e. it provides the institutional framework for the international cooperation of researchers and developers. The most important forms of this are affiliations and agreements for cooperation. Moreover, that international activity can be considered here which is focused, on the increase of foreign aid, sponsoring and orders for R&D.

At home, it supports the Hungarian institutions and researchers through organizational, advisory, information and financing services in order to enable them to fill up their institutional frames with concrete projects and cooperations, and to link up with the domestic financing system of the R&D sphere. The ultimate goal of international know-how and technology transfer to increase the technological and production level and the innovation capabilities of Hungarian entrepreneurs /production and services/, and to offer the possibility of marketing R&D results and the products of the entrepreneurial sphere abroad.

International cooperation requires the establishment of institutional frames that efficiently promote know-how and technology transfer, a broad access to the intellectual and technical values produced in foreign countries and, vice versa, the introduction and marketing of Hungarian products abroad. In the course of the past two years, a significant change of orientation has taken place in our international scientific and technological relations as well. We have established and consolidated our institutional links with ministries in the advanced industrial countries responsible for R&D. The number of our bilateral intergovernmental conventions on scientific and technological collaboration has increased.

2.7 Quality improvement and technical regulation

Among its objectives to increase the competitiveness of the national economy, information policy has an outstanding significance in raising the quality standards, and in establishing and introducing a quality assurance system.

In Hungary, a standardization system is to be developed that helps the Government to fulfil its tasks of technical/legal regulation, and also helps the economic entities of the nation in their adaptation to the requirements of a market economy and to the system of conditions necessary for their operation, and that ensures the legal, professional and institutional conditions of linking to the international standardization system.

The protection of scientific and creative work requires the modernization of rules related to the right of intellectual property our further objectives are:

- to unify the law extending over patents and trade marks, to provide legal harmonization, to introduce "product protection" in Hungary;
- to eliminate the gaps of legislation in the field of protection of intellectual property /succession of rights, utilizing the names of old firms, trade marks, etc./;
- to modernize copyright law /supervision of the rules to protect computer programs, issues related to the leasing of programs, correction and enforcement of the sanctions against forgery and infringement of the rights of others, etc./.

2.8 Information technological aspects of innovation policy

The information policy has to consider the information demands of those involved in the in a broader sense of information. As a necessity, the actors on the R&D stage of the innovation process must live in an extremely information and communication intensive environment.

3. THE RENEWAL OF THE ORGANIZATIONAL STRUCTURE OF INNOVATION

3.1 Bridge constructing institutions

In the advanced countries an extremely wide and multi-faceted range of "bridge constructing" institutions has been developed:

- The development of a network of technical development institutions near to universities will facilitate the practical application of the results of joint research.as well as the involvement of the research capacity of the university in market-oriented target research processes.
- In our economy only, a small number of engineering offices exist where technological knowledge and experience can be hired.
- The professional consulting organizations render assistance through their skilled professionals for new or young technology-intensive and/or existence-funding ventures in organizing their activities, marketing, management.
- Several technological broker offices are required to deal with the marketing of Hungarian R&D results and technological procedures.

- Three science based industrial parks are being built in Hungary. Science parks in cooperation with universities can help the industrial introduction of research products, the transfer of technology mainly for new ventures at the beginning of their business activities, and mediate and organize the R&D solutions for new ventures through the involvement of the nearby R&D institute and/or university. The science parks established in the late 1980s face difficulties, due mainly to the lack of demand. It is reasonable to investigate their potentials and to take the necessary steps under the principle of "save the better".

4. FINANCING AND REGULATION OF INNOVATION

4.1 Financing and regulation of R&D

The very unfavourable decreasing tendency and low standard of R&D inputs should be changed by governmental economic polices.

In 1991, Hungary spent 1.18% of the GDP on scientific research and technological development, this was less than half of the average in the 1980s. According to preliminary data, this ratio decreased in 1992 to less than 1%. In 1993 it reached again 1% of the GDP.

5. PARTICIPATION IN INTERNATIONAL SCIENTIFIC AND TECHNOLOGICAL RELATIONS

5.1 The system of international S&T relations

Hungarian R&D potential (assets, financial and human resources) make up only a fraction of the R&D potential of the world, i.e. the major part of the "knowledge of the world" has been produced elsewhere.

Therefore, it is our basic interests to maintain an R&D potential capable of producing its own intellectual added value and/or of recognizing, receiving and adopting values produced somewhere else. On the other hand, we have to detect systematically and under institutional circumstances that part of "foreign knowledge" that we need and are able to adopt. In compliance with our needs and possibilities, we have to import knowledge both in the easily accessible domain of public information, and in the region of intellectual barter cooperations, and in the category of commercial outputs available on the market. These three knowledge categories, concerning basically different domains of intellectual property rights, require and/or assume a differentiated approach, governmental behaviour, and a pool of assets. The more so because in each of the three cases, the owners and the users of information are different, so the subjects of possible international cooperation can also represent at least three categories in the course of the implementation of know-how and technology transfer.

5.2 Bilateral scientific and technological relations

The contractual bases and the political and legal framework of bilateral scientific and technological programmes between the Hungarian Government and those of the counterpart country are based on conventions of scientific and technological cooperation . These documents provide a supportive political environment for the development of bilateral S&T cooperations and create a regulated framework, through the stipulation of the main principles and procedures of responsible governmental agencies and executive organizations, for the actual cooperation and for the continuous updating of the related programmes.

6. HOW TO FOLLOW UP GENERAL TRENDS IN THE TECHNOLOGY FLOWS, IN THE PRIVATISATION PROCESS

6.1.The Role of Technology Exchange Service

Recognising the importance of technological innovation in the competitiveness, a process of promoting it by the transfer of ideas, knowledge, devices from leading companies, R&D organisations and academic research institutes to more general application in industry and commerce was encouraged and the TES was set up.

The scope of duties of the TES :
- collection of results of R&D projects,
- processing of publications inland and abroad,
- co-operation with domestic and overseas institutions,
- establishment of international connections.

6.2. Privatisation Process in Hungary

The radical changes in the political structure lead to a healthy and gradual privatisation of the state owned sector which represent cca. half of the productive and service industry.

Since 1972, the first FDI law in this region of countries, Hungary has got definite advantage over for the others.
New enterprises have grown up:

1988	1993
some 5ooo state enterprises some private firms	15oo purely big state enterprises 100000 Ltd, joint stock company 6ooooo private entrepreneurs

These smaller, more flexible enterprises could cope better with the circumstances which are imposed on them by the requirements of market economy.

6.3. Two possible ways for creating private enterprises

In 1982 the legislation encouraged the creation of small and medium-sized enterprises (SMEs). The Hungarian Enterprise Promotion Fund and the National Office for Small Businesses were set up.

After the first phase of privatisation called "spontaneous" the government set up the State Property Agency with the tasks of privatising more than 22oo state-owned companies and helping others in the transformation into private ones. According to Western estimates 4o% of FDI were invested in Hungary by means of privatisation out of the USD 7.2 billion capital inflow till the end of 1993.

7. FOREIGN DIRECT INVESTMENT AND TECHNOLOGY DEVELOPMENT

7.1.Foreign direct investment and R & D

The number of joint ventures with foreign participation approaches 18ooo and the invested capital exceeds USD 7.2 bn. Annex I. is dealing with the " TOP 50", the biggest joint ventures in Hungary.
The investment climate - involving the former tax system - is designed to support FDI in the high tech fields of industry e.g. telecommunications, electronics, biotechnology, computer directed machine tools etc.

Foreign capital inflow appears mainly in construction, metallurgy and light industry, but concerning the engineering, chemical and pharmaceutical industry the level of R & D expenditure are higher in the joint ventures than the industrial average.
1.7 per cent in the engineering and 1.2 per cent in the other ones respectively, compared with 1.3 per cent and 0.9 per cent of the total expenditure by Hungarian firms.

Though foreign investments are being directed at a relatively high rate towards the distribution and service sectors but there are signs of a new trend towards contribution to the technological modernisation of the Hungarian productive sphere.

A certain macroeconomic context can be stated between inflation - 16-22 % - and the uneven spread of FDI into the manufacturing and service sectors.

Concerning the imposed centrally planned economy in the last four decade, the need for restructuring not only the industry but the whole economy as well, to improve the poor telecommunications network. Annex II. is dealing with the Investment Promotion Fund with the main task how to help foreign investors to overbridge the lack of roads, water and gas pipelines, electricity, telephone lines for green field investments.

7.2. Innovation activity from the standpoint of FDI

Because of the so called "geografical trap", small and mediumsized enterprises from overseas cannot cope with the difficulties caused by the far distance and excess expenses arosen. SMEs are taking part in the capital inflow and privatisation mostly from the neighbouring countries. The percentage of Hungary's market economy neighbours in the FDI shows that Germany's proportion one third, Austria less than one third, Switzetland one seventh, although the leading power the United States of America's investors.

FDI of multinational companies in manufacturing - best example is car-producing industry - have undoubtedly been of value for technological modernisation and innovation process.

Up to now Hungarian inventors have served the world technical and technological level with more than 2oooo inventions (carburrettor, gas filled electric bulbs, radar echo from the Moon, Vitamine C, description would fill many volums), that is why investors find an innovative surrounding in Hungary.

New techniques have been imported for "high tech" mass production. New challenge for sub-contractors is the need to improve the quality of their components in order to fit to the highest standards.

The indirect impact of FDI is worth mentioning. Not only new, sometimes voluntary internal organisations, but changes in the legal rules, for example in accounting system, further in the everyday management methods, fulfilling all the requirements of the transition to a market economy.

Changes in the human resources management as it was quoted in the first chapters, will take effects in the long run. These give wide range of possibilities to foreign investors for rapid profitability, using well-educated but cheap engineers and technicians. The biggest multinationals have decided to transfer a certain part of their R & D activity to Hungary attributable to this high level of scientific capability.

The role of Hungarian Chamber of Innovation is to exploit the hostile climate for innovation, to promote the effectiveness of domestic and foreign endevours.
The scientific and technological resources of the country should be met at this forum for exchange of information. This Chamber offers entrepreneurs a vast selection of consultancy and assistance services in areas ranging from research to financing and the "match-making" activity, search for partners. The background information given by this Chamber are vital important for entrepreneurs and inventors, too. The members of the Chamber form a relatively influential group of specialists.

8. LEGAL CONDITIONS AND INSTITUTIONS FOR TECHNOLOGY

8.1. National Patent Office

NPO has been in charge of industrial property protection and harmonisation of the patent laws with international novelties for a century.

8.2. Hungarian Office for Standardisation

HOS play important role in the economic system, for Hungarian products have to conform to standards in the world market. The main tasks of HOS are compiling, recording and disseminating information on standards, collaborating with experts and international organisations, supporting the state administration.

8.3. National Office of Measures

NOM is dealing with drawing up internationally compatible national metrological standards and conducting research into metrology.
NOM is also responsible for certifying official measuring instruments and checking their application in practice.

8.4. COCOM control

In 1991 all controls imposed by COCOM countries on " high tech " instruments, computers, know-how etc. were removed.

9. NEW STRATEGY FOR TECHNOLOGY

9.1. Priorities of technology import in the FDI field

The Parliament enacted the Investment Act in 1988, priorities can be derived from the principles:

Electronics
Production of computer peripherals
Production of electronically operated telecommunication main and subexchanges
Production and application of robot technology
Production of computer-assisted design
Production of electronic equipment
Production of components for vehicles
Production of motor vehicles
Production of machine tools,
equipments for agriculture and food processing industry, too
Machinery components
Packaging technology
Development of domestic protein basis
Food-processing products
Production of agricultural breeding material
Products and equipment for the protection of environment

9.2. Governmental assistance

Having highlighted the priorities the government should give financial assistance as a restricted promotion of research, training and information.
There are a lot of advantages in Hungary to be exploited in food and agrobusiness, too.
The above priorities enlisted in 9.1. are living ones and help foreign investors and domestic partners as well finding the most prosperous way between investment and technology transfer.

Top 50 foreign investors in Hungary

Investor	Nationality	Hungarian partner or venture	Sector	Type	Year	Size of major shareholding	Investment in dollars
1. General Electric	USA	Tungsram	Lighting	Privatization	1990	100%	$550m
2. Volkswagen-Audi	Germany	Audi Hungaria Motor	Car engines	Greenfield	1993	100%	$420m
3. US West International	USA, Hungary	Westel, Westel 900	Cellular phones	Joint venture	1990	49%	$330m
4. General Motors	USA, Germany	GM Hungary	Cars, parts	Joint venture	1992	67%	$300m
5. Suzuki, C Itoh, Intl. Finance Corp.	Japan, Intl	Magyar Suzuki	Cars	Joint venture	1991	60%	$250m
6. PTT Netherlands, Telecom Denmark, other Scand. operators	Various	Pannon GSM	Mobile telecoms	Joint venture	1993		$250m
7. Allianz	Germany	Hungária Biztosító	Insurance	Joint venture	1990	67%	$220m
8. Transroute International, Banque Nationale de Paris, Caisse des Depots, Strabag	France, Austria	Hungarian Euro-Expwy.	Freeway const.	Concession	1993		$200m
9. Alcoa	USA	Kotem (Hungalu sub.)	Aluminum	Joint venture	1992	51%	$165m
10. Ferruzzi, Unilever	Italy, Netherlands-UK	NMV	Food and detergents	Privatization	1992	30%	$160m
11. Prinzhorn Group	Austria	Dunapack, Halaspack, Szolnok Paper Mill	Paper	Joint venture	1990	40%	$160m
12. Ansaldo, subsidiary of IRI	Italy	Ganz-Ansaldo	Elec. engineering	Privatization	1990	75%	$130m
13. PepsiCo International	USA	FAU	Soft drinks	Privatization	1993	79%	$115m
14. Guardian Glass	USA	Hunguard	Glass	Joint venture	1989	100%	$110m
15. Alitalia, Simest	Italy	Malév Hungarian Airlines	Airline	Privatization	1992	35%	$100m
16. Hungarian Investment Co.	UK	Nikex, others	Various	Portfolio invest.	1990		$100m
17. Sanofi	France	Chinoin	Pharmaceuticals	Privatization	1990	51%	$100m
18. Ford	USA	Ford Hungaria	Car components	Greenfield	1991	100%	$100m
19. Sara Lee - Douwe Egberts	USA	Compack	Coffee	Privatization	1991	100%	$100m
20. Coca-Cola Amatil	Australia, others	Budapest Likőripari V.	Soft drinks	Privatization	1991	100%	$100m
21. Kempinski, Dresdner Bank	Germany	Grand Hotel Corvinus Kempinski	Hotel	Greenfield	1987	85%	$95m
22. Nestle	Switzerland	Nestle Intercsokolade	Confectionery	Privatization	1991	97%	$94m
23. Siemens	Germany	Telefongyár, others	Telecoms equip	Privatization	1991	100%	$94m
24. South African Breweries	South Africa	Kőbányai Sörgyár	Brewery	Privatization	1993	50%	$90m
25. Heidelberger Zement, Schenk		Cement és Mészművek, Vác	Cement	Privatization			$83m
26. Banca Commerciale Italiana, Bayerische Vereinsbank, Long-Term Credit Bank of Japan, Sakura Bank, Societe Generale	Italy, Germany, Japan, France	Cent. European Intl Bank Group	Banking	Joint venture	1979	64%	$67m
27. First Hungary Fund	USA	Various	Various	Portfolio invest.	1990		$80m
28. Stollwerck	Germany	Budapest Confect. Co.	Confectionery	Privatization	1992	70%	$80m
29. Marriott, GiroCredit, others	USA, Austria	Duna Intercontinental	Hotel	Privatization	1992	90%	$77m
30. Agrana	Austria	Hungrana	Sugar, starch	Privatization	1990	53%	$70m
31. Hoechst - Messer Griesheim	Germany	Oxygen and Dissolved Acetylene Co	Industrial gases	Privatization	1991	97%	$70m
32. Voest-Alpine	Austria	Dunai Vasmű	Steelmaking	Privatization	1992	50%	$70m
33. Ferruzzi - Beghin-Say	Italy (France)	Mátravidék, Szerencs, Szolnok	Sugar, sugar factories	Privatization	1991	40%	$70m
34. Reemtsma	Germany	Debreceni Dohánygyar	Cigarettes	Privatization	1992	85%	$68m
35. Electrolux	Sweden	Lehel	Refrigerators	Privatization	1991	100%	$65m
36. Total	France	Petrol stations, propane-butane gas distrib.		Greenfield, Privatization			$65m
37. British-American Tobacco	UK	Pécsi Dohánygyar	Cigarettes	Privatization	1991	51%	$60m
38. Hungarian-American Ent. Fund	USA		Various, funded invest.	US govt.	1990		$60m
39. Sarp Industries	France	Dorog Refuse Incinerator, waste treatment	Pharmaceutical	Privatization	1993	52%	$60m
40. Philip Morris	USA	Egri Dohánygyár	Cigarettes	Privatization	1991	80%	$60m
41. Amylum	Belgium, Distilling Co.	Szabadegynázi	Distilling	Privatization	1991	99%	$60m
42. Julius Meinl	Austria	Csemege-Meinl	Retail	Privatization	1991	51%	$59m
43. Hafina	Switzerland	Thermal Hotel Aquincum	Hotels	Greenfield		35%	$58m
44. Aral	France		Petrol stations	Greenfield			$57m
45. Skanska	Sweden	East-West Bus. Center	Office develop.	Greenfield			$56m
46. European Bank for Reconst. and Development	Intl. financial inst.	Various	Telecoms, Var.		1992		$55m
47. Columbian Chemicals	USA	[illegible]	Carbon black	Joint venture	1993	60%	$55m
48. Institutional investors	USA	Forex	Retail	Share place	1991	30%	$54m
49. Accor Pannonia	France		Hotels	Privatization	1991	51%	$[illegible]
50. Tengelmann	Germany	[illegible]	Retail	Privatization	1993	50	$[illegible]

1994 CALL FOR APPLICATIONS
for allocation of support from the Investment Promotion Fund

The Investment Promotion Fund aimed at advancing foreign investment in Hungary continues to be regulated, in 1994, by Act LXXXIII of 1992 on specific separate state funds and MIER Decree No. 2/1993 (I.19.).

The Investment Promotion Fund is operated by the Ministry of International Economic Relations (hereinafter: the Ministry) in co-operation with other governmental bodies.

1. To obtain support from the Investment Promotion Fund (hereinafter: the Fund), wholly or partly foreign-owned economic organizations (limited liability companies, joint stock companies) may submit applications for contribution primarily to infrastructural developments outside of the site of ongoing production-related investments involving modern technology and/or to public utility projects.

   The requirements for the submission of an application are that the owner's capital or nominal capital of the economic organization be in excess of 50 million forints, foreign participation be at least 30 per cent, and the foreign cash contribution in convertible currency amount to at least 50 per cent of the foreign partner's share.

   The applicant must evidence with documents the payment of the full amount of the cash share when submitting its application.

In exceptional cases, especially if the production-related development employs internationally outstanding technology, companies having cash contributions in convertible currencies different from what is stated above may also submit applications.

2. The sum available to the Fund may be used, in relation to investments as defined in paragraph 1, for the establishment of infrastructure (especially the construction, extension or modernization of water, electricity, gas and heat supplies, drainage, roads, railway sidings, sewage filtering plants, telephone lines) to the boundaries of the site from outside, and as contribution to the development of public utilities, in proportion to the use or consumption as related to the purposes of the Fund.

   The range of support goals falling in the gratuitous category includes the infrastructure being created under the project (or through enlargement), whereas the range of support goals falling in the category subject to consideration covers the contribution to public utilities development to be paid for the use of the infrastructure already in service.

   Upon the recommendation of the Interministerial Committee, and on the basis of case-by-case decision of the Government, the Fund may also be used for the financing of the acquisition of state shares in economic organizations realizing investments of outstanding significance to the national economy.

3. Support is available from the Fund for the financing of infrastructural developments and/or contributions to public utilities projects to an amount of up to 20 per cent of the costs (of both the production and the infrastruc-

tural projects) or of 100 million forints, but such support may not exceed the total costs of the infrastructural investment outside the boundaries of the site and/or the costs of the contribution to public utilities development. For every investment project only one application may be submitted.

The support is gratuitous, except the sums applied for to cover contributions to public utility developments, which may be obtained as loans on favourable terms, with a two-years' grace period and a seven-years' period of amortization, at the current base rate of the central bank.

The size of the state-owned portion of assets acquired with Fund support for that purpose may not exceed 20 per cent of the subscribed capital.

4. The procedure of gaining support from the Fund may be initiated by economic organizations meeting the requirements as set out in paragraphs 1 to 3 through submitting applications. Applicants have to pay 3 per mill of the support applied for as application fee to the Investment Promotion Fund's account No. 232-90171-2944 kept by the National Bank of Hungary. Documents proving the payment of the application fee must be enclosed with the application.

In case of an unsuccessful application, the application fee will not be refunded.

An application should include as follows:

(a) The company name and residence in Hungary of the applicant(s);
(b) The documents certifying the existence of the requirements laid down in sub-section (1) of section 3

of Act LXXXIII 1992;

(c) The main particulars about the business of the applicant(s), including the market placement plans for the products;

(d) A detailed description of the project (including the infrastructure), a study on its feasibility, efficiency and return indexes;

(e) A detailed cost calculation for the project, including the scheduling of the costs;

(f) The distribution of the sources of finance for the project (own funds, loans, support etc.) in case the applicant plans to utilize other sources in addition to its own funds and those provided as support by the Fund; enclosure of relevant promissory notes;

The applications are to be addressed and submitted to the Secretariat of the Investment Promotion Fund of the Ministry (1051 Budapest, Vigadó u. 6.), where the papers necessary for the drawing up of an application may also be obtained.

5. The applications are evaluated quarterly, and the deadlines for the receipt of applications in 1994 are: 29 April, 29 July, 14 October, and subsequently the last day of the first month of every quarter.

6. The judgement of applications: Applications must be submitted in 8 copies. In cases of applications accepted by the Secretariat the applicant has to certify, in an on-the-spot checking, the payment of the corporate funds, the availability of the required construction site, the existence of the building permit and other authorizations, e.g. from the environment protection authorities, the availability of offers or contracts evidencing the project costs given, and the certification of the re-

quired resources. The applicant must further prove the planned infrastructure to be outside the boundaries of the construction site. Judgement and awarding will take place in consideration of the afore-mentioned submission deadlines, namely by 30 June, 30 September, and 31 December in 1994, and subsequently by the last day of every quarter.

In case of applications submitted for the acquisition of state-owned shares, the Government will take case-by-case decisions, on the basis of the recommendation of the Interministerial Committee.

7. On the judgement of the applications and the Government decisions concerning the acquisition of state-owned shares, the Secretariat will notify the applicants, and the names of the economic organizations having gained support or financing for the acquisition of ownership shares, a brief description of the project, and the amount of the support granted will be published, with the applicants' approval, in the publications of the Ministry of International Economic Relations, the Foreign Trade Gazette, and the Foreign Trade Bulletin.

In the event of a positive decision, the Minister of International Economic Relations will conclude a contract with the applicant on the conditions of the utilization of the support, the scheduling of the financial arrangement, and the sanctions concerning improper utilization of the support.

Ministry of International Economic
Relations
Secretariat of the Investment Promotion Fund