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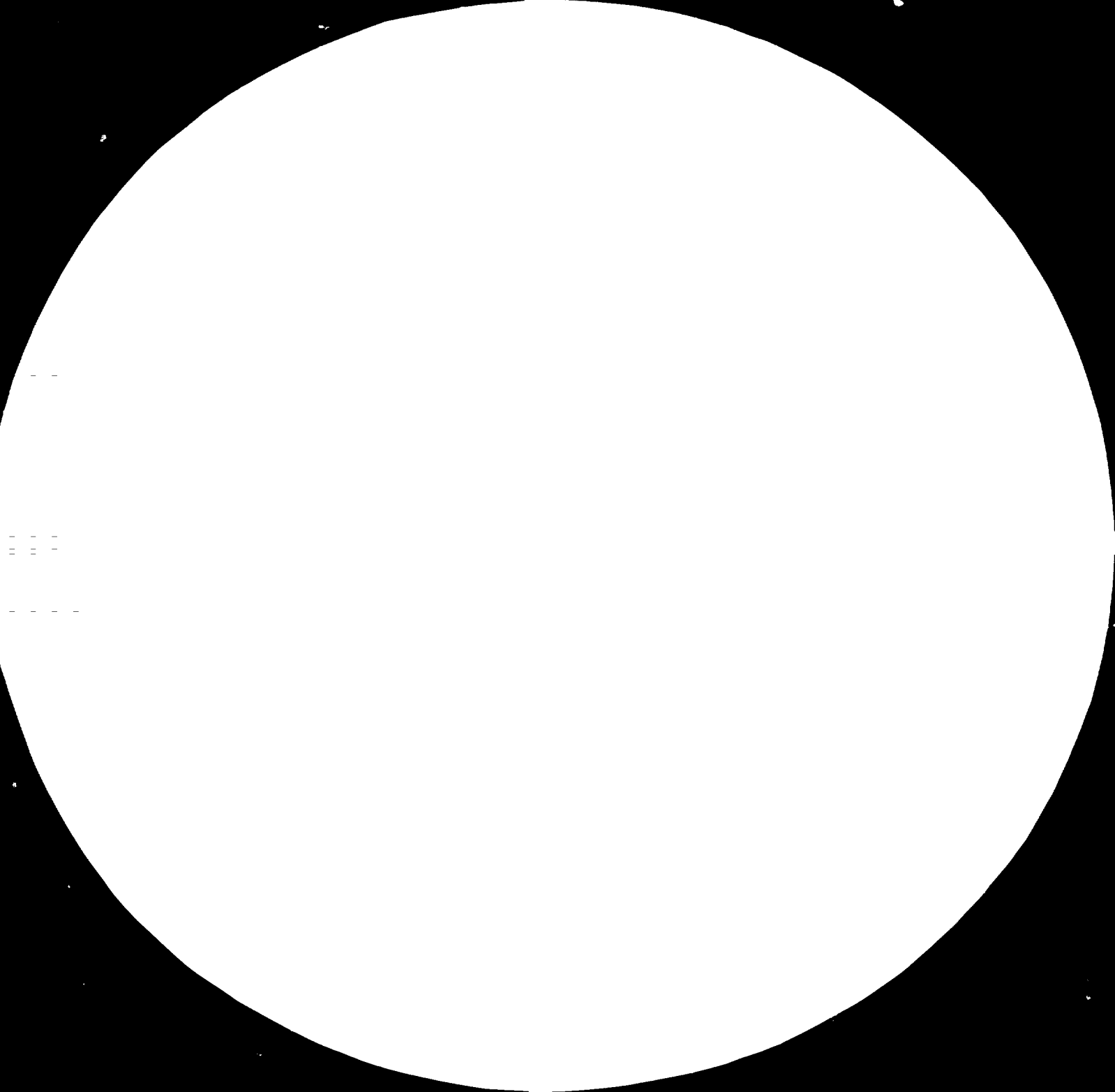
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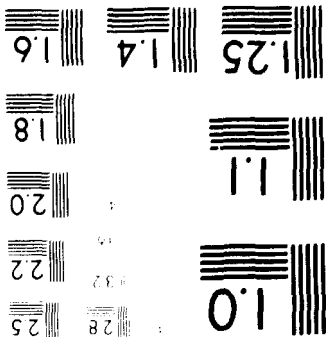
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United Nations  
Industrial Development Organization

SOME ASPECTS  
OF THE INTERNATIONAL ECONOMIC CO-OPERATION  
BETWEEN  
C.M.E.A. AND DEVELOPING COUNTRIES  
IN THE FIELD OF  
CAPITAL GOODS INDUSTRIES

STUDY

P O L Y T E C H N A                      T E R P L A N

P r a h a   -   C z e c h o s l o v a k i a

CON.80/107/MK

September 1980

United Nations  
Industrial Development Organization

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CAPITAL GOODS INDUSTRIES

Study

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I. To attack jointly the main obstacle

1. The purpose of this study is to draw the attention to certain so far rather neglected aspects of economic co-operation in the field of capital goods industry between the C.M.E.A. and the developing countries. It is also believed that a look at these aspects would provoke some rethinking amongst economists in the developed market economies as to their role to be played in the process of industrialization of developing countries.

2. In the search for the most appropriate ways and means of international economic co-operation which would support the creation of capital goods industries to the maximum it is essential to perceive fully the tendencies which are in control of the industrialization process of developing countries in its international setting. Sound knowledge of these tendencies could be of great help in making use of those of them which are in favour of the process and in removing or dampening of those which are working against it.

3. First of all it must be stressed that the main obstacle hindering industrialization of developing countries in general and the establishment of capital goods industries in particular is the international market mechanism which actually is the core of the existing international economic order. It is of fundamental importance that both the developing as well as the developed market economies are fully aware of this fact in view of the ever growing interdependence among all countries of the world.

4. It is also necessary to enlighten its bearing on the economic relations between the developing and the C.M.E.A. countries. These relations, although not regulated by the market forces,

cannot escape their influence due to the global economic interdependence.

5. Thorough examination of the international market mechanism and its impact on the industrialization of developing countries is the starting point of any effort to speed up the industrial development of the majority of developing countries. Consequently it is also the starting point for efforts aiming at arresting the widening of the gap between the world's rich and poor.

6. Owing to the dual character of the market mechanism in respect of the time factor it is extremely difficult to reveal its concrete detrimental impacts on the industrial development in the majority of developing countries. In the short run it is practically impossible to detect how and when the international economic relations based on the market mechanism begin to exert negative influence. In the long run, however, its negative impacts become quite obvious and could be easily revealed as continuous and even increasing lagging behind in industrial development. On the one hand, the economic considerations applied in the pre-investment, investment and operational phases with the aim to make the respective industrial units as effective as possible in order to secure their viability are of utmost importance. In this context the efforts to attain the highest possible profitability of the units cannot be questioned. This sound principle of attaining profitability, on the other hand, could turn into a destructive device if employed through the market mechanism at the macro-level as a decisive long term criterion.

7. The whole problem could be explained as follows: It goes without saying that the industrial projects must be identified and evaluated with utmost care taking into consideration all important aspects. In the preparation and evaluation



phases their technical and financial feasibility is assessed and the profitability calculated. Due to a host of deficiencies

existing in developing countries, such as undeveloped economic infrastructure, lack of skilled manpower, narrow markets, etc., very few industrial projects in manufacturing sectors could as a rule be viable from the profitability point of view. This applies in particular to the least developed countries. The result is that the productive capital, not finding profitable opportunities in less developed countries, looks for them primarily in the more industrially advanced developing countries and/or in the countries where abundance of financial resources (OPEC group) makes it possible to overcome quickly infrastructural constraints. The concentration of the flows of private foreign investment into manufacturing sectors (including capital goods industries) of large, industrially more advanced countries like e.g. Brazil, Argentina, Mexico, Republic of Korea etc. contributes significantly to the widening of the gap in the levels of industrial development among the different parts of the developing world.

8. The position of countries in international economic relations which are governed by the existing international economic order is formally and juridically equal but economically unequal. Formally all partners have the same possibilities and they are free to make their decisions. In reality, however, the less developed and consequently weaker partner countries have much less chances than the developed, stronger partner countries. The result of this inequality is that in the confrontation of interests in the framework of international economic relations the weaker partners are, as a rule, constantly losing in favour of the stronger partners.

9. The unequal, disadvantageous positions of developing countries in the world economy are being incessantly reproduced.

This development is contributing to rapidly growing social tension in developing countries accompanied by constantly deteriorating international relations. This dangerous trend makes it imperative that the developing countries achieve such a tempo of balanced industrial growth that will bring about the necessary structural change in the pattern of the international division of labour and through it the elimination of the existing economic gap between countries as soon as possible. It is, however, impossible to achieve this fundamental change if industrial development is left at the mercy of the world market mechanism.

10. And in fact the efforts of developing countries to bring about a fundamental change in the above described scenario have produced meagre results. The majority of developing countries, particularly the least developed ones cannot succeed in this endeavour as long as they are looking for a remedy in conditions which are governed by international market mechanism. They cannot make the projects profitable if the necessary pre-conditions are absent. Only a few industrially advanced developing countries are in a position to offer conditions for certain profitable manufacturing industries. Even these countries have to employ various regulatory functions of the state whenever trying to reduce the dependence of their economies on the big international corporations and to secure steady, balanced growth. It became quite obvious that even the most industrially advanced developing countries cannot rely on market mechanism when trying to steer their industrial development in the long run.

11. To put it short: Under the conditions of the existing international economic order which is based on the market forces there is little chance left for the majority of developing countries to achieve the level of industrial development that would secure the attainment of goals set in the Lima Declaration and Plan of Actions as well as in the Development Decade.

12. To make the international industrial co-operation to work successfully towards this basic change at least two very important revolutionary principles have to be applied in this co-operation. The first of these principles is that the developed economies have to secure such conditions for the establishment of viable industries which are absent in the respective developing countries. If e.g. the market for the output of the respective industrial unit is too small to make it viable the needed outlet should be provided by the developed partner country, if possible by offering its own national market.

If it is impossible to make an industrial project viable because of lack of skilled manpower it is up to the developed partner country to provide the manpower together with the necessary training facilities. Similar actions apply to availability of various materials, know-how and other needed services, as well as to the capital in financial and physical terms..

13. The s e c o n d important principle is to make the developed economy partner to become highly interested in the scheme. If the partners are asked to provide fully or partly certain conditions as e.g. the market, skilled manpower, know-how, capital participation, credit, etc. it is quite natural that they would expect some sort of compensatory benefits in order to make the relationship equivalent as to the exchange of values and equitable as to the benefits to be shared.

14. It is therefore of utmost importance that all the partners involved in the co-operation should share benefits and thus become interested in the whole proposition. The best way how to make the C.M.E.A. countries interested in joining the proposed scheme seems to be to offer them possibilities for industrial activities which would help them to fulfil their plan targets. The proposition could be explained with the help of the following sketchy example: Let us e.g. assume that a developing country looks for a possibility of establishing a factory to produce electric motors on the basis of her own copper resources. It would be quite natural if this country proposed that a producer in a developed country would participate in the construction and operation not only of the factory producing electric motors to cover the developing country's needs but also of additional capacities with a production programme fixed according to the partner's specific requirements as for example certain components, copper wire, motors of special design and the like.

15. Theoretically there are inexhaustible possibilities for similar combinations which could be used for making the partners interested in the joint venture schemes. The principal precondition for success along these lines is that the proper institutions and people get the proper information and that these institutions and people would get interested in taking over the initiative.

16. If the developing countries made use of the above incentive by offering the developed economies the possibilities for industrial activities according to their own needs, it would become necessary to make the concept of industrial co-operation as broad as possible in order to offer a variety of combination of industrial activities to satisfy all the partners. Such a concept could provide conditions for a special treatment of the capital goods industries particularly in cases when the question of priority is involved. In any case the individual proposals or schemes of industrial co-operation should be of complex, basketlike character.

17. The application of the above mentioned basic principles in practice would presuppose and necessitate the closest possible contacts, collaboration and co-production of the partners. This is inevitable if peoples and organizations with very different background, psychology and skills are to create jointly something new. They have to keep closest contacts with each other in order to overcome a host of obstacles and strong traditional tendencies brought about by the market mechanism. They have to reach not only the planned objectives /as e.g. the construction and operation of a factory/ but this should be done in such a way that in the process of creation maximum experience, know-how and skills are acquired by the indigenous staff from top to bottom. The main reason why the turn-key contracts should be avoided should be seen in the necessity of transferring skills to the indigenous employees to the maximum.

18. In search for the most suitable form of industrial co-operation which would offer chances for the closest possible contacts and collaboration everything points to the joint venture. First, the stake of the partners in the joint venture equity forces them to take every effort to make the venture a success. Second, the training of the indigenous staff cannot be effected formally. It is performed on the job in the very sense of this term. The people who are being trained are working with full responsibility having the possibility to consult their colleagues any moment they deem necessary. The expatriate colleagues, on the other hand, can watch their work and give them the necessary advice.

19. The advantage of industrial co-operation schemes organized and controlled at the governmental level comes very distinctly to the fore in the moment when disputes and conflicts that may arise within the co-operation schemes have to be solved. In order to reach quick satisfactory solutions of these cases the respective interstate agreements should provide for a specific arrangement /e.g. a mixed arbitration commission/ which would enable to deal with the majority of such cases. Direct contacts between governments make it possible to find solutions on the basis of mutual advantage.

20. The international joint venture form offers the possibility of interesting approaches in the financial sphere. For example: the initial periods with zero or negative profitability of the venture could be bridged over by means of special credits to be obtained from multilateral or bilateral sources. One should expect that the involvement of developed economies in industrial ventures in developing countries and particularly their equity participation in these ventures should enhance the ventures' chances in obtaining the necessary soft term credits.

21. Joint ventures with capital participation of the socialist countries implemented on the principles as formulated in this paper ought to be given high priority in granting them favourable

credits by the World Bank Group's institutions and/or from other multilateral sources. Similar approach could be applied in respect of the OPEC funds. These credit requirements are fully justified.

The participation of partners from the C.M.E.A. countries in a joint venture consisting of financial, material, technological, managerial and skill contribution is backed by the socialist state within its legislation and according to the agreements concluded. This kind of involvement together with the contribution of the respective developing country provides the best possible guarantee for any credit facilities to be granted.

22. Another way how the UN could provide effective assistance for the international joint ventures concerns training. It is suggested that in order to cover excess cost of an extensive "in plant" training of domestic manpower to be employed in the respective unit and/or elsewhere in the developing country adequate financial support should be provided from the respective UN funds. Contributions of this kind made in the difficult initial phase of the life of an industrial unit should be considered as most efficient.

In plant training of this kind supported by UN contributions could later, after it had proved to work satisfactorily, turn into a permanent arrangement within the whole UN training system.<sup>1/</sup>

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1/ The above suggested new mode of providing training facilities within the UN programme could be effected e.g. in the following way: Any international industrial joint venture operating in a developing country might be given a preferential treatment when filing through the appropriate channels a request with the respective UN body for financial support to cover excess costs incurred through overstaffing when providing in plant training of indigenous manpower.

23. The socialist countries appear as natural partners of developing countries when considering the application of the above outlined approaches to international industrial co-operation. Their qualification for co-operation of this kind stems from the very substance of their economic system in which the state plays a decisive role being in full command over internal and external economic activities of the respective country. This makes it possible that the principles of international economic co-operation which have been proclaimed at the UNO and other international and national forums are also really applied in the practice. The socialist state is able to secure that its subjects, i.e. the peoples, organs and organizations act in such a way that all the partners involved attain really equal and equitable positions towards each other. To achieve this it is not enough to secure e.g. the equivalence of the mutual exchange of values and with it connected equitable distribution of benefits and costs. It is even more important and it has already been stressed elsewhere in this paper that the crux of the whole problem should be seen in securing equal footing for the less developed partners by providing conditions which are absent in their economies.

24. In developed market economies the role of the state is quite different. Obviously much effort and various special arrangements would be needed to achieve at least some results along these lines, particularly in providing conditions in developing countries in order to put them on equal footing.

25. The difference between approaches of the socialist and the market economy countries to industrial co-operation with developing countries boils down to the different way of fixing objectives. The market economy entrepreneurs are ready to establish any industry if the invested capital is secure and brings satisfactory return. Their decision making is profit-oriented and through their business activities they contribute to the industrialization of the respective developing country.



The socialist states as entrepreneurs of special kind are also interested in securing high profitability of any industrial unit they help to establish but only as a means to reach objectives fixed from the national economy viewpoint as efficiently as possible. When making decisions whether to join an industrial co-operation scheme with a particular developing country they have in mind the long term national economy objectives of both /all/ partners and the question how to reach them efficiently and in a mutually advantageous way. It is quite evident that each of both approaches offers very different possibilities for industrial co-operation with developing countries. This is particularly true in the case of capital goods industries which, as a rule, require to be dealt with from the long-term, national economy point of view.

26. The suggested joint venture and other possible forms of equity participation by socialist countries in enterprises to be established in developing countries in the framework of a close industrial co-operation may lead to discussion on the possibility of exploitation of the labour force. More precisely: there exists an opinion that the part of the capital which has been supplied by a socialist country is participating in direct exploitation of the workers employed in the respective joint ventures. In order to remove the possibility of misunderstanding in this respect the following clarification of this question is offered:

27. First of all it should be clearly said that the question whether socialist countries could participate in exploitation of labour force in developing countries through their participation in equity capital is wrongly formulated.

Whether any kind of capital is exploiting labour force, is a question of internal concern of the respective country. Similarly, of internal character is the question how big is the surplus value included in the export prices in the form of profit reached by the same country. Since an international joint

venture is a form of international economic relationship the question must be put as follows: "Is country A exploiting country B through participation in a joint venture?"

28. In order to find out whether by means of international economic relations exploitation of one country by another takes place it is necessary to compare the sums of values they mutually exchanged in a given period of time. Practically the flows of goods and services taking place in the framework of this exchange must be expressed in world market prices. For example, the prices attained in foreign trade of country A with country B cannot disclose whether one of both countries is exploiting the other. Only when the respective prices reached in this exchange are compared with average world market prices it could be found out whether and how much more one of the two countries has acquired as compared with values transmitted to the other.

29. Practically only in cases when substantial differences of this kind have taken place for a considerable period of time /several months or years/ it could be said that the economy of the losing country has been exploited by means of nonequivalent international economic relations in general or through foreign trade in particular. At the same time it is quite clear that the existence and the size of the surplus value contained in the export prices in the form of the profit has no meaning for this conclusion. The question how big is the surplus value created in individual economic activities and who is taking possession of it is internal concern of the respective country so far as it remains within the economy. Only when it is transferred abroad it becomes an issue of external relations of the same country and could be looked at in conjunction with international exploitation.

30. The concept of equivalence of international exchange of values should be understood in the broadest possible sense. It should cover not only the flows of values among countries but also all the impacts on the economy that were brought about as the result of the partner's activities. A nonequivalent exchange of values in the broad sense takes place when on the basis of their strength the developed market economies not only acquire more values than the developing countries as their partners but at the same time create, as a result of their activities and actions, such conditions in the economy of developing countries that will work in their favour and to the detriment of developing countries in the long run.

31. As far as the sum of international values received by country A from country B is approximately, in terms of world market prices, the same as the sum of international values received by country B from country A, and no detrimental impact on each other's economy occurred, no international exploitation and nonequivalence in this relationship took place.

32. It could be presumed that the international market mechanism leads automatically to nonequivalence in international economic relations because of unequal positions of the countries involved with the result that the weaker and less developed partner country is the loser. A market economy on the basis of its stronger position in the relationship gains usually more favourable prices and conditions as compared with average world market prices and conditions. Naturally these surplus gains have been reached at the expense of the weaker partner. This is not enough. The stronger market economy through its activities based on its more favourable position would usually, as a result of an objective tendency, enforce such pattern of the exchange and consequently also of the production in the respective developing country that would serve best its own interests.

33. A case of nonequivalence takes place if the foreign partner prolongs the ownership of his share of the capital and continues transferring profits abroad after his capital had been repaid by means of profit repatriation. The only way how to keep ownership of the capital after it had been repaid and not to commit international exploitation is to reinvest all the profits locally. There are many other practices derived from the stronger position of the developed market economies that contribute to losses of developing countries as a part of nonequivalent exchange.

34. The position and functions of the socialist state in the economy and in its international relations makes it possible to fully ensure the real equivalence of exchange of values between the socialist and developing countries so that no international exploitation can take place. The appropriation of profits derived from the capital participation in a joint venture, if reinvested locally or repatriated up to the amount not exceeding the foreign equity plus average interest rate, cannot be considered as exploitation.

35. On the whole, at least one of the possible conclusions deserves the attention of those who want to push the case of the developing countries' industrialization a bit forward; viz.: Very little can be done in this case including the self-reliance efforts if things are left to be governed by market forces within the existing International Economic Order. Without political will and decisions and close co-operation between governments, enabling the use of new forms and approaches to offset the paralyzing influence of the order, practically nothing substantial can be reached. This is particularly true in the case of the capital goods industries.

II. Co-operation between C.M.E.A. and developing countries  
in the field of capital goods industries

/Basic features, approaches and forms/

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36. The policy of socialist countries in relation to capital goods industry development in developing countries has been guided by the genuine desire to assist the developing countries in breaking the vicious circle of dependence on imports of capital goods from developed market economies, in particular from transnational corporations. Judging from their own experience, the policy makers in socialist countries share the view now expressed by leaders in developing countries that for achieving the real sovereignty in making investment decisions determining the over-all pattern of economic development, the development of capital goods industries is a crucial pre-condition.

37. The main areas of co-operation in building up industries in developing countries have been so far the energy sector, ferrous and non-ferrous metallurgy, in particular iron and steel industry /including the raw material base/, mechanical engineering industries, construction materials and other related industries. Additions to the capacity of developing countries are quite substantive: e.g. the industrial facilities already built or under construction in developing countries with the U.S.S.R. assistance have a combined capacity for the production of 19.6 million tons of steel, 14 million tons of iron ore, 21 million tons of coal, 53.4 million tons of oil, 3,5 million tons of cement and 0.5 million tons of aluminium.

38. The socialist countries co-operated in setting up or expanding the industries essentially in two ways. The first consisted in building the iron and steel industry /in some cases with related iron-ore and coal mining capacities/ which provided the basis for the subsequent setting up, again with the assistance of C.M.E.A. countries, of metal working industries including heavy engineering, machine tools industries etc. This method was applied especially in countries of larger size, which have already reached a relatively higher level of industrial development and were endowed with respective natural resources. This pattern of industrial co-operation may be called an "Indian model", where the U.S.S.R. and other socialist countries have been involved in a kind of "downstream" pattern of developing capital goods industries around the nucleus of iron and steel plants.

39. The other, so called "upstream" pattern of building up the capital goods industry has been applied mainly in agricultural machinery and transport industries. Czechoslovakia, the U.S.S.R., Poland and other C.M.E.A. countries have been engaged in building the assemblies of tractors and other vehicles in various developing countries /Burma, India, Egypt etc./. Initially, production was based fully on the imported parts and components, at later stages - in line with the increasing capacity of the respective developing countries to produce components - the production process has been at least partly "domesticated". In some cases, the developing country became even a supplier of certain components to the "mother" industrial firm in a socialist country. The latter case represents the most promising trend in industrial co-operation based on intra-industry specialization.

40. In building up the capital goods industries, developing countries face among other obstacles also a serious problem of the limited size of the national market. In many capital goods industries the optimum /minimum/ size of the plant allowing to achieve reasonable costs of production /through economies of scale/, especially in case of smaller countries, exceeds the absorption capacity of both the present and prospective domestic market. So far, most of the projects in this field assisted by the C.M.E.A. countries have been domestic market oriented. It is becoming obvious that in order to increase the scope and efficiency of co-operation some of the capital goods industries should be from the very outset conceived as partly export oriented. Since it is rather difficult /though not altogether impossible/ for both developing and socialist countries to penetrate with the output of newly established plants the markets in developed capitalist countries, often monopolized in the field of capital goods by big international monopolies the feasible course of action may lay in exports oriented towards socialist or other developing countries' markets.

41. The first strategic line of policy to expand the export potential of developing countries consists in promoting intra-industry specialisation arrangements between the industrial enterprises of C.M.E.A. countries with the newly established industrial partners in Developing countries. In some cases, such industrial co-operation schemes are designed with the aim to export the bulk or the total output of the newly established plant in a developing country to the co-operating partner in a socialist country. This method is applied to smaller developing countries with very narrow domestic markets.<sup>2/</sup> The other line of policy should involve the C.M.E.A. countries in co-operation on capital goods industry projects of a regional character, oriented towards supplying the needs of several developing countries. There are indications that the latter trend has already started: e.g. Romania and Czechoslovakia agreed to help to build mechanical engineering plants in Peru, much of whose output is expected to be exported to other states of the Andean Group.

42. Capital goods industries have certain special characteristics: relatively lumpiness of investments, long gestation and recoupment periods, and, complex backward and forward linkages to the other sectors of the national economy. There are several important implications stemming out of these characteristics:

- the need for a long term planning with the time horizon of about 10 - 15 years;
- the programmes for building up capital goods sector should be a part and parcel of a comprehensive socio-economic plan in order to effectively contribute to the harmonious development and integration of the national economy, to the achievement of the over-all social and economic goals;
- the need for the state to undertake leading role not only in the planning process but also as an active investor. The state is often the only subject capable of undertaking the necessary investment.<sup>3/</sup>

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<sup>2/</sup> Example of this type of export oriented industrial co-operation is given in the Annex containing information on a joint-venture set up in Malta with Czechoslovak participation.

<sup>3/</sup> See page 19



43. The general approach of C.M.E.A. countries to industrial co-operation fits very well the above mentioned requirement implications. The complex medium and long-term economic planning pursued by C.M.E.A. countries is reflected in their efforts to put also the industrial co-operation with developing countries on a firm, complex and long-term basis. With a number of developing countries long-term agreements on economic co-operation have been already concluded, of which the industrial co-operation agreements form an integral part. Undoubtedly, there is much room for improvement: the main course of action lies in closer co-ordination of national industrial plans. In the context of this paper, the most relevant is the issue of, on the one hand, improvement of efficacy of planning capital goods sector in developing countries and, on the other hand, closer reflection of the specific needs of the developing countries /type of investment goods including their technological characteristics, adequate supply of software and spare parts etc./ in industrial plans of the C.M.E.A. countries. As the experts on a recent occasion pointed out: "... more efforts are needed on both sides

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3/ Even in developing countries with a relatively developed private industrial sector like e.g. Mexico, this sector proved not to be capable of developing, on a broad front, the capital goods industries: "Capital goods in general imply long gestation periods and yields often less attractive than those from investment in consumer goods. Hence, private entrepreneurs could not be expected to come forward to invest in all the types of capital goods that a country may find socially necessary to produce. This necessitated, at least partially, the channelling of investments through the public sector". /See the summary of Mexican experience in the Report of the Seminar on Strategies and Instruments to Promote the Development of Capital Goods Industries in Developing Countries, Algiers, 1979, ID/WG.314/23 pp. 6-7/.

for gradually achieving better co-ordination between the national development plans /or the plans of selected industrial sectors/ of the socialist countries and the interested developing countries." 4/

44. The need for adopting a complex, long-term attitude in developing co-operation in capital goods industries between C.M.E.A. and developing countries is linked also to other factors. The C.M.E.A. countries pursue systematically the above mentioned<sup>5/</sup> principle of mutual advantage. The C.M.E.A. participation in building up capital goods industries in developing countries results mainly in creating capacities serving essentially the needs of the developing countries concerned. Although in the future, with higher levels of industrial co-operation achieved, part of the output of the established capital goods industries may be directed back to the C.M.E.A. countries, this is not likely to be sufficient for the repayment of the credits extended for the financing of the capital goods projects. Hence, the need arises for capital goods projects to be parts of a more comprehensive economic co-operation and trade links /packages/ between the partner countries, encompassing other sectors as well.

45. It is well established that the C.M.E.A. countries are, and will be, in a need to import agricultural produce and certain raw materials. It would serve the aim of balanced trade /in the long run/ and the principle of mutual advantage if e.g.

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4/ Meeting of Senior Experts on Industrial Co-operation between Developing and Socialist States, Sofia 4 - 8 September, 1979, Summary of New Ideas, Suggestions and Recommendations, Unofficial UNIDO Document.

5/ See part I of this paper

co-operation in establishing capital goods industries were combined with the co-operation in mining and mineral processing and agricultural export oriented sectors in line with the needs of both the developing and the C.M.E.A. /importing/ countries. Comprehensive long-term agreements on economic co-operation in various sectors /including capital goods/ provide a suitable frame for satisfying long-term needs and equitable distribution of benefits for both co-operating partner countries.

46. At the operational level, the application of the principle of mutual advantage in the area of industrial co-operation requires an assessment of the benefits that are to be derived by both developing and C.M.E.A. countries from the implementation of the co-operation programmes. After all, in organizing any scheme for industrial co-operation /including the capital goods sector/ the countries concerned face the necessity to evaluate its direct and indirect impacts on national economies.<sup>6/</sup> The national mechanisms of assessing the efficiency of industrial co-operation schemes /projects, programmes/ have been developed, though to a various degree, in both groups of countries. It should be pointed out that the assessment of the efficiency /benefits/ of a given project or programme is first of all a matter of each participating country, where the whole set of national economic and social objectives serves as the supreme criterion.

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6/ If the contracting party in a developing country is a private firm /which is rather exceptional case in regard to co-operation with C.M.E.A. countries, in particular concerning capital goods sector/, the private party would apply rather narrow criteria of profitability. The assessing of the over-all economic and social impacts /benefits/ of the given industrial co-operation scheme must be carried out by the central planning agency or another governmental body applying broader socio-economic and more complex criteria.

47. When it comes to identifying mutual interests of the participating countries, assessing the effectiveness of various alternative industrial co-operation schemes, and, considering the issue of distribution of benefits, the need arises for a methodology to be established at the international level. In regard to bilateral co-operation between individual C.M.E.A. and developing countries these mechanisms and procedures have been gradually established and have been functioning quite successfully. These comprise meetings of the heads of state and government representatives, a system of consultations at various levels, intergovernmental agreements and permanent intergovernmental commissions for economic, scientific and technical co-operation, working contacts among planning organizations etc. The experience shows that, provided the adequate institutional set-up is formed, the more comprehensive is the range of co-operation activities, the greater are the possibilities of identifying the areas of mutual interest and balancing the benefits derived from the totality of co-operative endeavours of the countries concerned. The mechanisms for multilateral co-operation among the C.M.E.A. and developing countries are only beginning to function. Due to the size and complexity of some of the capital goods projects /programmes/ this form of co-operation offers additional possibilities of expanding co-operation in this field, at the same time facilitating to achieve higher levels of efficiency than bilateral co-operation.

48. It should be pointed out that one of the main pre-conditions for further expansion of mutually beneficial industrial co-operation in which developing countries are involved is the preparation of an operational methodology for approximate qualitative and quantitative assessment of actual benefits accrued to the partner countries. This does not apply only to multilateral forms of co-operation where the assessment methodology is yet to be developed but also to bilateral co-operation where

the existing methods give the results in rather general terms and should be refined. It might be worth to follow up the suggestion that UNIDO, C.M.E.A. and the relevant agencies from socialist countries would take the initiative of preparing a Manual for assessment the efficiency of international industrial co-operation tailored to the prevailing conditions in developing countries. <sup>7/</sup>

49. One of the basic features of the socialist countries' co-operation with developing countries is the unity of approaches and principles applied at both the governmental /macro-economic/ and enterprise /micro-economic/ levels. This is an intrinsic characteristic of the socialist economic system which is based on the social ownership of the means of production. Planning at macro, sectoral and enterprise level is used as an instrument for securing the co-ordination and harmonious development of economic activities including those related to developing countries. Hence, the agreements on industrial co-operation with developing countries aiming at strengthening and developing the investment goods sector are being implemented by the respective public sector's industrial, designing, trade and other organizations /firms/ which strive to fulfill the contractual obligations. Thus, there is no room for the conflict of interest and approaches which may arise in the case of private firms /e.g. trying to secure monopoly in certain lines of capital goods/ and the declared objectives of the given government policies towards industrialization of developing countries as it sometimes occurs in case of developed market economies.

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7/ See "Summary of New Ideas, Suggestions and Recommendations", UNIDO unofficial document band on the discussion at the meeting of senior experts ..., Sofia, 4 - 8 September, 1979, p. 15

50. Co-operation in establishing capital goods industries in developing countries is usually a part of a much broader framework of over-all agreements on economic, scientific and technical co-operation between C.M.E.A. and developing countries. This section of the paper will briefly review the essential forms of co-operation used in C.M.E.A.-developing countries relationships, paying attention in particular to those forms that are being used in co-operative efforts related to capital goods sector. When reviewing the various forms one may distinguish the so-called traditional and new forms of co-operation and also the different levels of co-operative arrangements: intergovernmental level and the "enterprise" level. However, the dividing lines are far from clear-cut, in actual life both the various forms and different levels are intertwined.

#### Intergovernmental agreements and related institutions

51. For planned economies of C.M.E.A. countries, long-term intergovernmental agreements on economic, scientific and technical co-operation offer the most suitable form of co-operation. These agreements identify the main directions and fields of mutually advantageous co-operation, lay down the guidelines to be followed in implementing the co-operative endeavours in various sectors and usually contain the provisions for setting up the appropriate institutional framework. For the developing countries such comprehensive, long-term agreements take on added importance in view of the complex and long-term task of restructuring and modernizing their economies involving i.e. building up of capital goods industries, expanding the technological and research base and upgrading the level of manpower skills throughout the economy. Within the framework of intergovernmental agreements it is possible to tie co-operation measures in capital goods industries with programmes in

related industrial, scientific and training fields and by linking them with long-term national plans of each of the partner countries to put this type of industrial co-operation on a firm, long-term basis.

52. The intergovernmental agreements of a general nature are usually supplemented by agreements on assistance extended by C.M.E.A. countries in realization of individual large projects and the development of certain sectors. This type of agreements was concluded e.g. between U.S.S.R. and India in case of major projects in iron and steel and heavy engineering industries. Due to the complexity of capital goods industries, specific intergovernmental agreements on co-operation in this sector might prove to be a suitable instrument. This applies in particular to developing countries where the state sector assumes the leading role in capital goods industries development.

53. With increasing volume and complexity of economic co-operation under the above mentioned intergovernmental agreements, new organizational forms emerged in 1960s: the permanent intergovernmental commissions for economic, scientific and technical co-operation. These joint commissions are set up by the respective C.M.E.A. and developing countries with the tasks of analysing the state and main problems of co-operation between the partner countries, working out jointly measures to be taken to stimulate trade, economic, production, scientific and technical links, co-ordinating actions of the partner countries, and, dealing with practical issues arising in the course of implementation of the agreed co-operation schemes. Within the commissions, specialized working groups are usually set up to deal in more detail with various fields /e.g. trade and finance, industry, agriculture, science and research etc./.

54. In some cases, joint intergovernmental commissions have been set up for co-operation in specific industrial sectors, again being structured into various working groups. Thus e.g.

joint GDR-Syria commission deals i.a. with co-operation in electrical power engineering and the construction of cement plants in Syria. Though such specialized joint sectoral commissions working on a permanent basis are still only few, they may be considered a very promising type of an institutional set-up for the effective formulation and implementation of the co-operation programmes in the area of capital goods industries.

55. The establishment of such permanent specialized commission is connected with the recent trend towards concluding the agreements at the ministerial and departmental level. In the U.S.S.R. the ministries for industry are now responsible not only for the building of the corresponding enterprises in the developing countries under intergovernmental agreements, but also for organizing industrial co-operation, supply of spare parts and maintenance of machinery and equipment delivered abroad. In discharging these duties, the ministries are vested with the authority to conclude inter-departmental agreements with departments in partner developing countries.

56. An important element in improving the mechanism for co-operation can be seen in the establishment of closer direct contacts between the central planning bodies of the socialist and developing countries. Such long-term contacts are a key prerequisite for achieving the important aim of creating, through co-operative efforts, mutually complementary economic structures in the dynamic process of industrialization of developing countries. Admittedly, there are differences in character and role of planning in socialist and developing countries. However, the accumulated experience of C.M.E.A. countries' co-operation with planning agencies in some of the developing countries /e.g. India/ shows that these differences are not an insurmountable obstacle to an efficient interaction between the planning mechanism of the partner



countries and that it is possible to create a system for at least partial co-ordination of national economic plans. This, of course, is of utmost importance in case of such key industries as capital goods industries. In addition, the close co-operation of planning agencies facilitates exchange of experience on planning techniques, contributes to better understanding of planning mechanism in partner countries, which, by itself, enhances the scope for more efficient and flexible co-operation in various sectors of the national economies.

Co-operation arrangements at the enterprise /organization/ level

57. The intergovernmental agreements on co-operation are usually filled with a concrete content and implemented through contracts concluded between trade and industrial organizations /enterprises/ of the C.M.E.A. countries with corresponding organizations in developing countries. In regard to capital goods industries there are foreign trade organizations in charge of direct contacts with customers in developing countries. Thus e.g. in the U.S.S.R. "Machinoexport" supplies drilling, hoisting, transportation, iron-smelting, steel making, foundry, rolling, oil production, mining and prospecting equipment. "Tiazhpromexport" supplies the equipment and renders technical assistance for the construction of iron and steel plants. In Czechoslovakia "Skodaexport" is involved in design and supply of rolling mills, power plants, the Polish association "Polimex-Cekop" specializes in exports of complete plants /in particular sugar and chemical industries/ including all the necessary technical assistance.

58. Besides the "routine" exports of equipment the C.M.E.A. countries have been involved in co-operation in the establishment of quite a number of major projects in capital goods industries in developing countries. In case of major projects

the co-operation is carried out in a complex manner, the organizations of socialist countries supplying equipment, providing technology and rendering all the necessary technical assistance including the designing and training the personnel of developing country both "on the site" and in corresponding industrial establishments in socialist countries. The financing of such projects has been usually arranged through governmental credits at low rate of interest /2 - 3 per cent/ with repayment terms tailored to the nature of the project involved.

59. There has been a general trend in developing countries away from the practice of 'turn key' projects supplied by foreign contractors. The disadvantages of the 'turn key' projects are well known. Nevertheless, use of this form of industrial co-operation is sometimes the only feasible way to initiate the development in certain branches of industry. If the 'turn key' projects function as a pilot project to be followed by other projects of the same type which will rely more on local inputs, skills and acquired experience, it may speed up considerably development. In view of this the socialist countries responded favourably in the past to the requests of developing countries for the provision of 'turn key' projects. The socialist countries, however, whenever conditions allowed strived for a maximum degree of the participation of local firms through subcontracting, in particular in regard to the construction portion of the project. In line with general policy to contribute to the strengthening of the indigenous capacity, whenever feasible, the partners in developing countries were involved in working out the design. In this connexion the case of Indian steel industry may be mentioned. Here, the co-operation with the U.S.S.R. and other socialist countries resulted not only in increasing the capacity of India to produce steel and equipment for steel plants, rolling mills etc. but, at the same time, the indigenous capacity to adapt and design the respective technology was developed through comprehensive technical assistance programmes and establishment of joint design and research bureaus.

60. This is a very important aspect of co-operation in the field of capital goods industries: a mere construction of industrial plants would add to the capacity of the developing country to produce capital goods, however, it would deepen its external

technological dependence. Therefore, the co-operation must be more complex enabling the developing country to master, adapt and further develop related technology in a self-sustained manner.

61. Recently several new forms of co-operation have been increasingly introduced with the aim of expanding the scope and raising the efficiency of industrial co-operation and adapting it to the changing requirements of the developing countries.

62. The C.M.E.A. countries organizations started entering into agreements with state and private companies in developing countries on specialization and co-operation in production. In capital goods industries intrasectoral type of specialization is of utmost relevance, with best prospects existing in mechanical engineering, metal-working, agricultural machinery and transport equipment industries. Due to the difference in the industrial development level between socialist and developing countries, specialization and co-operation initially start with socialist countries supplying parts, units and certain types of materials to be used in the manufacturing industries of the developing countries. Gradually, with the technical assistance of the socialist countries, the share of locally-made components is being increased and finally, the developing countries' enterprises start supplying final products and/or components to the partner organizations in socialist countries. Some experts see greatest possibilities in expanding this type of co-operation and exports of developing countries to socialist countries in particular concerning parts components and units for cars and trucks, tractors, freight cars, electric motors, some types of machine-tools, consumer durables etc. <sup>8/</sup> Through this type of specialization and co-operation in production a stable base is being built for a new pattern of international division of labour resulting in export of manufactures from developing countries thus

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8/ See The Industrial Co-operation of the Soviet Union and the other C.M.E.A. Countries with Developing Countries, Paper prepared for UNIDO /ICIS/ by L. Z. Zevin, ID/WG. 299/9

increasing the portion of finished goods-in their total trade. Co-operation in production requires the closest permanent contacts between the industrial enterprises in countries of both groups involving transfer and adaptation of technology, supply of equipment and spare parts, quality control, and, management.

63. The complexity and technological sophistication of capital goods industries poses a requirement of closest and long-term contacts /links/ between the co-operation partner organization. It appears that the organizational form satisfying this requirement may be found in joint ventures /sometimes called mixed companies/.

64. In the past, in response to the requests from developing countries, the C.M.E.A. countries became increasingly involved in establishing joint ventures with partners in developing countries. Admittedly, majority of these joint ventures are mixed trade companies aimed at promotion of two-way trade relations. However, this entrepreneurial form of co-operation is gradually being applied on larger scale for industrial units including the industrial enterprises in capital goods sector. Joint ventures have been set up in mechanical and electrical engineering and in metal working industries. For example, the Polish - Nigerian "Motor Assembly Co" assembles cars from parts and components imported from Poland. Another Polish - Nigerian company assembles agricultural machinery from units and parts supplied by Poland. A Czechoslovak - Indian company assembles the "Zetor 2011" tractor from Czechoslovak parts. The range and depth of these activities is constantly expanding. E.g. at the meeting of the Polish - Indian permanent commission on economic co-operation an agreement was reached to launch joint ventures in ship-building, manufacture of textile machinery, manufacture of spare parts and units for motor and agriculture machinery /tractors/ industries.

65. The joint ventures have certain advantages which make them a suitable institution for co-operation efforts in capital goods industries. Direct participation of organizations of socialist countries facilitates the transfer and adaptation of technology, assures the closest co-operation during the "running-in period" and involves the partner from a socialist country in continuous participation in management, maintenance, quality control, marketing and other aspects of economic activities which determine the efficiency of the industrial enterprise functioning. Sharing in costs, benefits and risks of the whole operation naturally stimulates the development of the closest links and mutual harmony of interests among the partners.

66. The formation of joint ventures is in no way motivated by the interest of socialist countries in controlling the enterprises concerned through their share in equity capital as already explained in Chapter 1 of this paper. This is reflected i.a. in the provisions on "phasing out" the participation of socialist partners in equity capital which are contained in quite a number of joint venture agreements from the very outset. As soon as the joint venture set-up is not needed for successful operation of the industrial enterprise the socialist countries are prepared to relinquish their property rights to the local partners.

67. Another form of closer co-operation /which does not involve equity participation of socialist countries are the compensation or "buy back" arrangements which have been successfully practised in particular in raw material extraction and processing sectors. Under these arrangements the socialist countries provide a comprehensive assistance in carrying out, and sometimes, operating the projects. The cost of assistance which is covered, by long-term credits are repayed back by deliveries of the output of the established industrial plants. The "buy back"

arrangements often extend beyond the limits of loan repayment thus providing a permanent market for the newly established capacities in developing countries. Although the "buy back" agreements have the largest scope of use in mineral resources sector, they can be also used as an effective instrument for promoting the participation of socialist countries in establishing capital goods industries. Thus for example it was envisaged that Czechoslovakia's participation in building up heavy and light engineering industries in Iran would be combined with compensation agreements providing for long-term supplies of Iranian natural gas, oil and petroleum products. Here, it become obvious that the possibilities for co-operation in development of capital goods industries are greatly enhanced if the co-operation is set into a broader framework of economic co-operation covering various fields.

### III. Some aspects of technology transfer and industrial supporting activities

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#### The technology transfer issue

68. Everything what has been said in the first chapter of this paper about the international market mechanism being the main obstacle to industrialization efforts of developing countries can also be applied in the case of technology transfer. Moreover one may add that here the things are even worse since technology is much more concentrated in the industrialized countries than is the concentration level in the industrial production proper. Manufacturing technology is very often protected by patents and the know-how is held in secrecy. Even in cases when patent rights are not involved and the know-how is available from several sources the organizations in developed market economies responsible for basic engineering assume, as a rule, a central and, in respect of developing countries, a monopoly role in the project implementation including technology. This is particularly true when the respective developing country has little knowledge of the technical complexities and implications and limited experience with licensing agreements.

69. It is well known that the negotiating position of developing countries in acquiring technology on an enterprise-to-enterprise basis is extremely weak and vulnerable. In the conditions of the market economy the owner of the technology know-how can fully exploit his semi-monopolistic position to get from the recipient unjustified high payments of various kinds and to make him a long-term source of undeserved benefits through various tie-in clauses. This situation is characteristic practically for all sorts of technology transfer performed in

the market economy. It is therefore natural that the developing countries try to employ various regulatory measures in order to protect their economies. This negative approach, however, seems to be self-defeating for it usually works as a barrier against acquisition of the very much needed technology. An active approach as suggested below may perhaps bring better results:

70. The two basic principles to be applied in approaches to international industrial co-operation with developing countries as proposed in the first chapter of this paper offer also ideas as how to treat the case of technology transfer. These principles require

- a/ that the developed partner country helps to create pre-conditions for establishing industries which are absent in the respective developing country in order to make the respective project viable and the relationship between participating countries equitable,
- b/ that the developed partner country is made highly interested in the proposition through offering it attractive production possibilities within the co-operation package deal.

A suitable application of these principles and the form of joint venture may offer ways and means for proper dealing with the problem of technology acquisition.

71. In a joint venture with an equity participation of a C.M.E.A. country the acquisition of technology and know-how can take all possible forms and methods, as recommended in



the respective UN documents and publications, provided that the payments for the transferred technology contribute to equivalent exchange of values between the partners involved in the long run. This provision naturally presupposes, among others, a practicable methodology is available for calculating the benefit-cost ratios and the sums of values, including the payments for the acquired technology, to be equivalently exchanged.

72. The application of the above mentioned principles in a joint venture makes it possible that the required technology and know-how will be acquired as a natural, self-evident and logical thing because the transfer was done as an inherent part of a long-term mutually advantageous co-operation scheme.

73. This approach will also greatly help to overcome the problem of how to rapidly absorb the technology not only in the unit itself but also in the whole economy of the respective developing country.

74. In recent years various issues have been discussed on the subject of efficiency of technology transfer between developed and developing countries. It is becoming obvious that the problem does not consist only in the quality and in the way of the transfer itself but largely in the capability of a country to absorb imported technology. As the developing countries are not commonly capable to make full use of transferred technology, it is up to the industrialized countries to render them such technical assistance that would facilitate the smooth and effective course of technology adaptation to the maximum.

75. This is not easy to attain when the acquisition of foreign technology takes place predominantly on an enterprise-to-enterprise basis under the severe pressure of the market. Consequently, the profit motivation may overwhelm the basic interests of

the lagging economy. This is a frequent situation in which the technology transfers from developed market economies are carried out. It is necessary, however, for the process of absorption and adaptation to be realized under conditions that would prefer comprehensive and long-term effects of the transfer. Such conditions can be created when the planned and rather non-commercial approach is applied. The C.M.E.A. countries, prefer, therefore, the governments or state organizations to play the decisive role in both countries when transferring technology. These partners provide a guarantee that the technology transferred for a specific production line or for a single firm will be disseminated to other potential users and that the interests of long-term development of the whole economy will be pursued.

76. The adaptation of technology seems to be less problematic in the more advance developing countries where a certain amount of technological knowledge has already been accumulated. Here the technical assistance can be concentrated on specific technological cases in certain fields of interests. The adaptation process in the less advanced developing countries, on the other hand, requires more complex technological assistance and more intensive involvement of the developed countries. In this connection, joint ventures can be considered as the most suitable set-up.

77. One of the greatest advantages of the joint venture is that it offers a possibility to acquire composite technology in a package without necessity of payment in foreign currency. In the respective inter-governmental agreement a provision can be made that the value of the composite technology transfer to the respective developing country would become a part of the equity capital to be provided by the partner from the C.M.E.A. country. This conversion of lump-sum payments covering fees for supplied know-how into equity holding could naturally be combined with percentage royalty, e.g. in cases of a continuing technological support.

78. The equity participation in joint ventures combined with specific contractual provisions makes it possible for the C.M.E.A. partner countries to closely watch the process of the technology adaptation and to take adequate measures whenever necessary.

79. Joint ventures offer good conditions also for effective vocational training. The local personnel is trained directly in the course of project implementation. All levels of organisational structure of the plant should be covered by the training programme, including production and commercial management, technical servicing, marketing etc. The training takes place either as part of operational activities of the joint venture and/or, as a parallel in-plant training in the respective C.M.E.A. country. In a joint venture plant the trainees have to perform their jobs under a close guidance of the expatriate specialists. This is a very efficient sort of training but involves excess operational cost to be met by the venture in a financially very difficult phase of its existence. A possibility how to render effective assistance in this situation is tackled in the first chapter of this paper.

80. Thorough vocational training is very important in capital goods industries. In both the capital or labour intensive patterns of capital goods production there is always a great call for both "old skills" /traditional technical experience/ and "new skills" /the sophisticated knowledge of electronics, computer-controlling and data processing etc./. The training programmes comprise above all the individuals /workers, foremen, technicians, engineers, etc./. Nevertheless, the mastery of a higher level of complexity required by the capital goods industries is not solely a problem of skilled individuals but also a question of collective knowledge, of an efficient work-team. A joint venture plant is again the most promising place for this kind of training.

Information for industrial co-operation

81. The lack of information is a repeated complaint pronounced by representatives of firms and governments in both the developing and C.M.E.A. countries. Communication link between the two groups of countries is still insufficient and ineffective. There is therefore a strong need of undertaking initiatives by both sides aimed at better knowing each other.

82. The attitudes of developing countries towards economic co-operation and the confidence in the ways of solution proposed by socialist countries will much depend on comprehension and knowledge of principles, functioning and results of C.M.E.A. economies. The developing countries may be inspired by experience gained in the process of economic integration among C.M.E.A. member countries. It is advised to pay a special attention to the C.M.E.A. mechanism of multilateral industrial co-operation, as for example the present long-term, target-oriented comprehensive programmes for co-operation up to 1990 in the raw material extraction and processing, energy, capital goods, chemical, agriculture, food-processing and other industries.

83. Undoubtedly, it is also of great interest for developing countries to get acquainted with the functioning of the mechanism for providing special assistance - bilateral and multilateral - to the less advanced member countries of the C.M.E.A. such as Cuba, Mongolia and Vietnam. Moreover, there are various other forms of developed co-operation between the C.M.E.A. and other developing countries, which are not members of the C.M.E.A., such as Ethiopia, Iraq, the Democratic Yemen, Mozambique, Angola, Mexico, etc. The historical experience of socialist countries with industrialization through the accelerated development of production of "means of production" might be instructive for developing countries, as well.

84. The socialist countries are ready to supply developing countries with information on previously concluded agreements and contracts concerning economic co-operation with other developing countries, provided the contracting partners agreed to it. Such information, which includes the facts about prerequisites, contractual terms and realization of the agreement or contract, is very helpful to a developing country intending to undertake a similar investment. The knowledge of the precedent case will assist the investor in avoiding errors, committed in the past, and in making the choice of the best alternative.

85. One of the frequent wishes of developing countries is to get the information on the medium- and long-term development plans of C.M.E.A. countries in order to facilitate identification and utilization of the existing potentials for co-operation.

86. On the other hand, the socialist countries wish to be well acquainted with the development potentials of individual developing countries in the field of raw material, existing production, human and other resources, and with economic and political targets formulated by governments and the entrepreneurial sphere /project-oriented information/, so that they may offer them an adequate economic and technical assistance.

87. The information flows between developing and C.M.E.A. countries may run at various levels but the main promoters of these relations in the C.M.E.A. association are, and always will be, the national governments, the Secretariat of the C.M.E.A. and the institutions directly subordinated to them. They prefer that their partners to be also the governmental institutions of developing countries, of regional organizations and of the United Nations system. Thus the exchange of information will be allcomprising.

88. The activities aiming at intensification of efforts may comprise publication and distribution of appropriate documents, organization of seminars and conferences for participants from developing countries, meetings and consultations of senior experts from governmental institutions of individual countries or from the C.M.E.A. Secretariat and the secretariats of regional economic organizations of developing countries to discuss issues of common interest, etc.

89. Besides, a more active and direct assistance is increasingly provided for the developing countries in establishing their national information systems. The experience of C.M.E.A. countries in collecting, processing and utilizing industrial and other economic information is vast.

90. The direct involvement of specialists from socialist countries in constituting industrial and other information systems in developing countries makes these systems more compatible with those of C.M.E.A. countries and more suitable for national planning purposes what, after all, is one of the most important preconditions for starting deliberate long-term co-operation.

Supporting industrial activities

91. There are some economic activities that are not involved directly in proper production of capital goods but are indispensable for it. These activities are closely related to the transfer of technical knowledge. They comprise various technical services as for example: training facilities, consulting engineering and designing services, setting up centres of applied research and planning institutions, creation of information systems etc.

92. Their importance for capital goods industries is obvious. Capital goods industries require rather extensive auxiliary services /so called software/ both for preparation of industrial projects and for the production process as well. These services account for 25 to 30 per cent of the total jobs of capital goods industries compared with 10 to 15 per cent of the jobs in the consumer goods and intermediate goods industries.

93. A large portion of industrial software and professional training is still provided from abroad but the increasing industrialization calls for strengthening the indigenous technical service facilities. Some developing countries with relatively large industrial sectors like India, Brasil etc., are already able to provide various industrial services as well as technological know-how. However, the majority of developing countries remain in the position of the explicit recipient partners who have to rely on suppliers from abroad.

94. The C.M.E.A. countries support the efforts of developing countries to achieve higher standard of technical services. The assistance is usually based on intergovernmental agreements on economic, technical and scientific co-operation. These agreements can be elaborated in more details in agreements

concluded between respective ministries and institutes. As an example, an agreement between the Ministry of Science and Technology and the Academy of Sciences of the German Democratic Republic on the one side, and the Ministry of Industrial Development, Science and Technology of India, on the other, was signed. Both sides are to carry out joint research in machine building, electronics, chemical and pharmaceutical industry and in the introduction of scientific achievements in production. Some permanent working committees have been set up too. Long-term contacts and agreements between research, design, educational and similar organization of socialist and developing countries will further "... new institutional arrangements and channels for technology transfer to developing countries, such as: /a/ Establishment of direct working relations between similar consulting firms, designing bureaus and other such institutions from socialist and developing countries for carrying out joint investigations, joint designing, contracting and subcontracting, etc. In the course of such joint activities technological problems of common interest would be solved. Even more important, in the process of the joint exercise training would be provided to specialists from developing countries, and would help them gradually, in the course of a number of years, to acquire knowledge and experience enabling them to assume a larger share of the exploratory, designing and other functions carried out at present almost exclusively by institutions from developed countries, socialist or western. /b/ Establishment of direct working relations between similar research institutes and universities, carrying out specific research and development activities of mutual interest aimed at solving jointly specific problems in the field of applied research, and in doing so, assisting the partner from a developing country in upgrading his competence. Such arrangements would contribute to promoting gradually research and development capacities in developing countries and would facilitate the long and difficult process of gradually restructuring the world's research capacities in favour of



developing countries. One might note in passing the paradoxical fact that at present more than 90 per cent of the research on developing countries is being done by institutions located in developed countries." /From Summary of New Ideas, Suggestions and Recommendations, Unofficial UNIDO Document; Meeting of Senior Experts on Industrial Co-operation between Developing and Socialist Countries, Sofia, 4 - 8 September, 1979/.

95. The co-operation between design, consulting, research and similar organizations is usually not carried out independently from other forms of the international economic co-operation. In practice, it starts usually with the preparation or realization of an industrial project. If for example the establishment of a capital goods production unit is intended, a joint team of specialists from the C.M.E.A. and developing countries can identify the investment opportunities and elaborate pre-feasibility and feasibility studies. Then joint designing can follow. Or, industrial research centres of two countries co-operate on a design of a machine which will be produced in a joint venture plant of these countries.

In this connexion, preference would be given to the formation of specialised industrial research and design centres in developing countries, the task of which is to promote development of certain types of capital goods by means of carrying out economic and technical evaluation studies, defining and designing technologies and production processes adequate to local conditions, contributing to vocational training, standardising, and controlling materials etc. Some of these institutions come into existence parallelly with the implementation of industrial production. The establishment of Metal Cutting Machine Tool Institute in Bangalore, India, can be mentioned as an example. The purpose of this Institute is to investigate and design new machine tools for Indian mechanical industry and to promote vocational training. The establishment of the Institute was organised by Czechoslovakia, as a donation, together with the realization of a machinery production project.

96. Two stages of co-operation can be usually distinguished. In the first period the training of domestic personnel and onesided transfer of knowledge occurs, while in the later period mutually advantageous co-operation takes place.

ANNEXExamples of industrial co-operation between manufacturing companies in CSSR and those in the developing countries<sup>+</sup>

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There are two projects now under operation in Malta which have the form of joint ventures between firms in Czechoslovakia and Malta.

The idea of setting up such joint ventures emerged from talks between the management of Malta Development Corporation /MDC/ and the representatives of Czechoslovak foreign trade corporation Fincom, who visited Malta in May 1975 with the task to review present economic situation as to the possibilities of raising the volume and level of mutual exchange of goods and services. The mission was stimulated by preceding intensification of political relations between the two countries.

Industrial co-operation was found the best instrument for the above purpose. The discussions ultimately concentrated on mechanical engineering as the most suitable sector to bring about new exportable products. It took another 8 months to define the object of co-operation in a sufficiently detailed manner. In a Basic Agreement between Fincom and MDC, in March 1976, vernier calipers and hydraulic components for machine tools were identified as products which could be manufactured in Malta on basis of Czechoslovak know-how and technological documentation. Simultaneously, a memorandum on industrial co-operation was signed by MDC, Fincom and the Czechoslovak manufacturing companies to be responsible for technical aspects of envisaged projects, i.e. SOMET Teplice /hydraulic components/ and TOS Rakovník /vernier calipers/, both belonging to the TST trust /the Trust of Factories Manufacturing Machine Tools/.

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<sup>+</sup> Contributed by M. Franek, Fincom Ltd., Prague

In July 1976, the Memorandum and Articles of Association as well as the Statute were agreed upon and two joint venture companies were set up and registered in Malta, the partners being MDC and Fincom. The collaboration between Fincom and the Czechoslovak manufacturers was regulated by contracts between them. The joint venture companies were named Hydraulic Units Ltd. /HU/ and Engineering Instruments Ltd. /EI/. The signature of the Partnership Agreement by Fincom and MDC took place in October 1976, simultaneously with the signature of the Agreement on Co-operation between TST and HU resp. EI.

Thus the contractual, legal and organizational arrangements were finalized and soon afterwards the construction of buildings began, while the first deliveries of machine tools and equipment were dispatched from CSSR before the end of 1976. The production started in mid 1977, i.e. about two years from the first encounter between the partners.

The motivation of the Maltese side was simply to create new employment opportunities and diversify exportable products. Czechoslovak side was motivated /in addition to the wish to increase mutual trade/ on one hand by the need to free some capacities of selected TST factories for the expansion of the production of precision devices for numerically controlled /NC/ machine tools /applies to EI/, on the other hand by the desire to replace imports from other territories /applies to HU/. Given this motivation and the above form of implementation, the whole exercise can be safely classified as "product transplantation", while of course no second hand equipment was used in the newly constructed factories in Malta.

The companies in Malta are limited by shares, the shareholders being MDC /60 per cent/ and Fincom /40 per cent/. Their Memorandum and Articles of Association and the Statute comply in the form with the business habits in Malta and are formulated

according to maltese laws, which stems from English legislation. Specific modifications are regulated by the mentioned Agreement on Co-operation.

The Czechoslovak side delivered also, apart from the obligations resulting from various contracts, a considerable amount of technical assistance. About 40 qualified workers and technicians underwent a free of charge training in Czechoslovakia for several months. The money for that came from the technical assistance funds of the Government. Czechoslovak partners in the joint ventures supplied several specialists not available in Malta, such as the technical manager, the financial supervisor, chief technologists and several foremen. Their wages enter the operating costs of the two companies.

The two companies provide jobs for cca 500 people. The production started in the middle of 1977, first products were exported to Czechoslovakia towards the end of the same year, the break-even point was reached in course of the year 1979, i.e. in less than two years from the take-off of the projects. Total volume of the production, which by now makes slightly less than US \$ 5 million, is being exported to Czechoslovakia. Along with the envisaged expansion of both joint ventures, a diversification of their product-mix as well as of the markets will most probably take place.



